Innovation and Leading Technology

# PORTABLE PRESSURE BLASTER

## Models 346-646

### With systems RC-176, RC-186 and Dual

( LG series )

# INSTRUCTION MANUAL & PARTS

2013-04-03

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# Definition of Terms Used In This Manual

**Abrasive (also known as "media"):** granular material used for blasting a surface.

**Blow down (also known as "depressurize"):** to expulse air automatically or manually from a pressurized vessel.

**Control Handle:** mandatory remote-control device used to start and stop the blaster.

**Depressurize (also known as "blow down"):** to expulse air automatically or manually from a pressurized vessel.

**Pressure Hold System (also known as "manual blow-down system"):** blasting system in which the pressure vessel stays pressurized when the control handle is released.

**Pressure Release System (also known as "automatic blow-down system":** blasting system in which the pressure vessel is automatically depressurized when the control handle is released.

**Pressure Vessel:** enclosed section of the blaster filled with pressurized air and abrasive during blasting operations.

**Pressurize:** to fill the pressure vessel with compressed air.

**Properly Trained Person:** a person who has successfully passed a training course in sandblasting pertaining mainly to the safe operation of stationary or portable Abrasive Blasters with capacities ranging from 1.5 $ft^3$ to 6.5 $ft^3$ and who has read this entire manual and understands it

**Silica :** hazardous substance found in many naturally occurring abrasives.
NOTE: Abrasives containing silica must NEVER be used in any blasting situation. Even if respiratory protective equipment is used, the resulting dust can cause respiratory disease

## Safety Symbols

**The safety symbols below are designed to ensure the safety and protection of the Abrasive Blaster operator and of anyone else nearby. The explanations provided apply to sandblasting equipment.**

**WARNING :**This symbol indicates a potentially dangerous situation that could result in serious injury or death if the instructions related to the symbol are not carried out. Throughout the manual, this warning triangle will appear to denote instructions requiring special attention.

**DANGER :** This symbol indicates a potentially dangerous situation that WILL result in serious injury or death if the instructions related to the symbol are not carried out. Throughout the manual, this warning triangle will appear to denote instructions requiring special attention.

# ⚠ WARNING ⚠

- **Anyone who will be running the Abrasive Blaster or who will be nearby during its operation must receive appropriate training in the safe operation of the equipment and must be cautioned about the potential hazards. Besides being adequately trained, anyone who will be running the Abrasive Blaster or who will be nearby during its operation must read, understand and follow all the procedures explained in the user manual. For replacement manuals, please contact your distributor or go to www.ECO.com.**
- **Anyone who will be running the Abrasive Blaster or who will be nearby during its operation must use respiratory protection that meets OSHA and NIOSH standards for breathing apparatus and supplied air.**
- **Because they contain large amounts of accumulated energy, Pressurized Vessels can cause serious injury or death if safety procedures are ignored. Never perform maintenance on a pressurized Pressure Vessel or attempt to open it under any circumstances. Always depressurize the equipment and disconnect it properly from its air source before beginning maintenance. Never modify the Pressure Vessel or do grinding or welding on it under any circumstances. Otherwise, the ASME certification will be void. Damaged pressure vessels must NEVER be used.**
- **The appropriate Remote (Deadman) Control System must be used to operate the Abrasive Blaster. Abrasive Blasters must NEVER be used without Remote Controls. Bleeder-Type Control Handles must NEVER be used with RC-176 or RC-186 Series Blasters because they can create dangerous conditions where the blaster does not shut off when the handle is released.**
- **Anyone who will be running the Abrasive Blaster or who will be nearby during its operation must use the appropriate safety equipment as well as common sense to protect themselves. The required safety equipment includes, but is not limited to, hearing, eye, body and lung protection. Because of their weight, Abrasive Blasters and the objects being blasted can cause serious injury or death if they topple over. All OSHA and NIOSH safety requirements must be followed at all times.**
- **Only genuine ECO replacement parts must be used for maintenance on the Abrasive Blaster. The equipment must NEVER be altered under any circumstances. Using altered brand parts can create hazardous conditions and will void your warranty.**
- **Before using the Abrasive Blaster, inspect it and make sure it is in good working order. Malfunctioning or damaged equipment must NEVER be used.**
- **Only clean, cool, dry compressed air must be supplied to the Abrasive Blaster. Hazardous conditions can result if moisture or debris reaches the Remote Control System. Compressed air supplied to the Blaster must not exceed 150 psi.**
- **Using an air-line pressure regulator is strongly recommended.**
- **Abrasive Blasters must NEVER be used in locations that could be deemed potentially hazardous according to Article 500 of the National Electrical Code, NFPA 70. The Abrasive Blaster must NEVER be used in wet locations. Electrically controlled Abrasive Blasters must always be connected to a ground fault circuit interrupter (GFCI).**

# HOW TO SET UP THE BLASTER

**WARNING :** The Operating Procedures described in this manual are intended to pr ovide basic information about the safe operation of the features of ECO RC-176/RC-186 Series Abrasive Blasters. The Abrasive Blaster should be operated only by persons who are fully trained in abrasive blasting.

## INSPECT THE PRESSURE VESSEL

When your Abrasive Blaster arrives, remove the Handway Assembly and check if any foreign objects have fallen in through the pop-up opening. If so, remove them all, and then reinstall the Handway Assembly.

**DANGER :** Maintenance must NEVER be done on the Abrasive Blaster nor should anyone try to open it while it is pressurized. Otherwise, serious injury or death will result from the violent expulsion of compressed air and propelled objects.

## RE-TIGHTEN THE HANDWAY ASSEMBLY

Once you have pressurized the Abrasive Blaster for the first time, tighten the nut on the Handway Assembly. Also, whenever the Handway Assembly is removed for maintenance, you must tighten the nut again, prior to and following the next pressurization.

**DANGER :** Maintenance must NEVER be done on the Abrasive Blaster nor should anyone try to open it while it is pressurized. Serious injury or death will result from the violent expulsion of compressed air and propelled objects.

## PURGE THE AIR SUPPLY HOSE

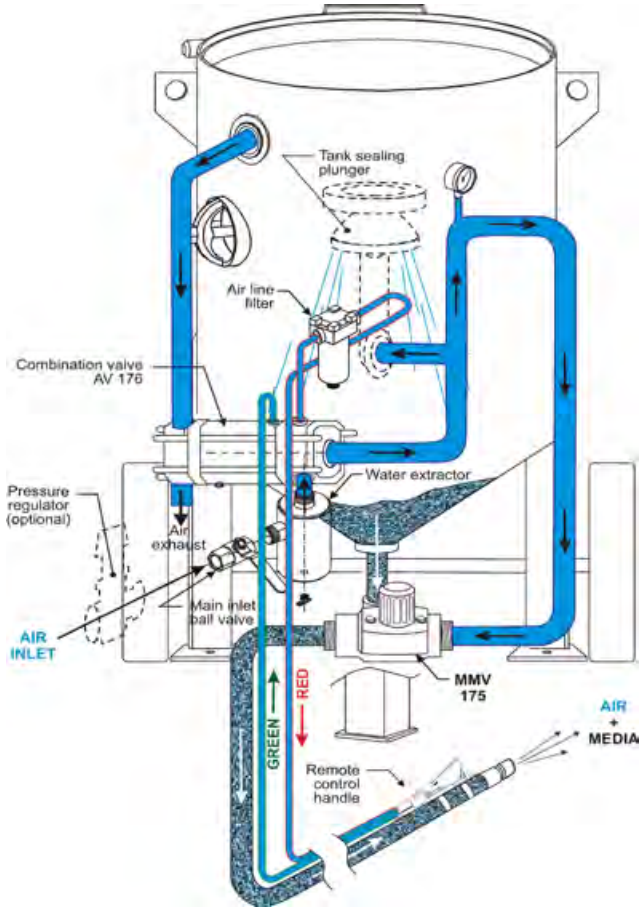
Before the Air Supply Hose is connected to the Abrasive Blaster, the hose must be purged of any moisture or debris. If there is standing water or moisture in the air line, the Abrasive Blaster will not perform optimally. Air supplied to the Abrasive Blaster must be cool, dry and clean.

## ATTACH THE REMOTE CONTROL HANDLE

Using hose clamps or heavy wire ties, fasten the Remote Control Handle to the Blast Hose near the Nozzle. Next, form a loop of Twinline/Control Cord where the first 6 inches of cord curve away from the Blast Hose, then the next 6 inches run parallel to the Blast Hose, and then the last 6 inches curve back to join the Blast Hose. At the location where the loop ends, fasten the Twinline/Control Cord to the Blast Hose by wrapping duct tape twice around the Twinline/Control Cord and then around the Blast Hose to form a strain-relief attachment. Do this only on the first connection near the Control Handle. Fasten the rest of the Twinline/Control Cord to the blast hose by wrapping duct tape around the cord and the hose, every 3 feet, beginning at the Nozzle end of the Blast Hose.

# RC 176 Control system

## How it works




**IMPORTANT :**

**A PRESSURE REGULATOR SHOULD BE INSTALLED ON THE AIRLINE FROM AIR COMPRESSOR**

When the main air-line ball valve is ON, air is supplied to the AV-176 Combination Air Intake and Exhaust Valve, which is usually closed.

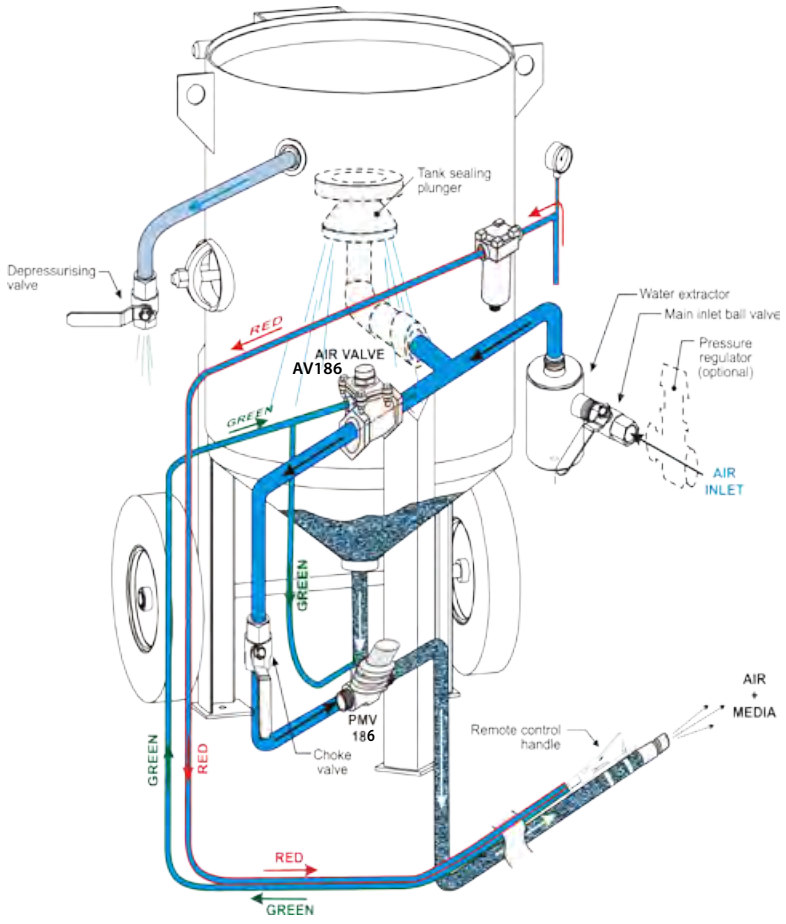
When the Remote Control Handle on the dual air line is depressed, the AV-176 Combination Valve will be activated, so the air can flow in. This forces the Plunger Pop-up Valve to seal the filling port and close the exhaust section of the Combination Valve at the same time, thus pressurizing the Pressure Vessel.

When the Control Handle is released, blasting will stop and the Pressure Vessel will automatically depressurize.

When you have finished blasting, always be sure to close the main inlet air-line ball valve.

# RC 186 Control system

## How it works




**IMPORTANT :**

A PRESSURE REGULATOR SHOULD BE ON THE AIR LINE FROM THE AIR COMPRESSOR

Make sure the main air-line ball valve is turned on. The Vessel will be pressurized, so the air can flow to the AV-186 Air Valve.

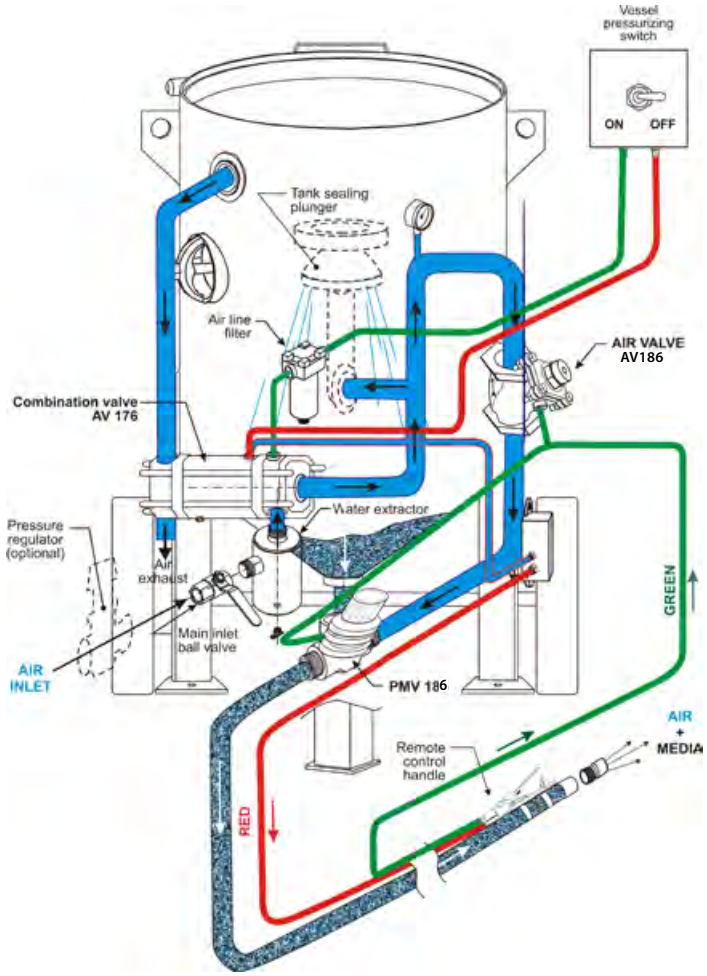
To begin blasting, depress the Remote Control Handle on the Blasting Hose near the Nozzle end. The Air Valve and the PMV186 Abrasive Metering Valve will then open, and blasting will begin.

To stop blasting, release the Remote Control Handle. The Air Valve and the Abrasive Metering Valve will then close to interrupt the blasting stream; however, the Pressure Vessel will stay pressurized.

When you have finished blasting or when you need to refill the Pressure Vessel with abrasive, depressurize the Vessel. To do so, first make sure the Control Handle is released. Next, close the main inlet air-line ball valve, and then slowly turn the manual depressurizing ball valve.

# RC176/RC186 Dual control system

## How it works




The air line feeds air to an AV-176 Combination Air Intake and Exhaust Valve, which is usually closed.

Turning the Vessel Pressurizing Switch to ON activates the AV-176 Combination Valve. The Exhaust Valve part of the valve seals the Vessel as air pushes the Plunger up to seal the filling port of the Vessel, which will then become pressurized. Once pressurized, the Vessel is ready for blasting.

Before blasting begins, close all the doors in the blasting room equipped with a safety door switch.

Blasting can begin only once all the doors are closed. To begin, depress the Remote Control Handle on the Blasting Hose near the Nozzle end. The Air Valve and the PMV-186 Abrasive Metering Valve will then open, and blasting will begin.

When you release the Remote Control Handle, the blasting will STOP. The Pressure Vessel will stay pressurized, ready to resume blasting when the Remote Control Handle is depressed again.

When you have finished blasting or when you need to refill the Pressure Vessel with abrasive, release the Remote Control Handle. To depressurize the Pressure Vessel, switch the Vessel Depressurizing Switch to OFF.

**WARNING : THE PRESSURE VESSEL MUST NEVER BE LEFT PRESSURIZED WHEN NOT IN USE.**

The Pressure Vessel should be depressurized and the air-line supply turned OFF.

# Before Blasting

## PRE-BLASTING INSPECTION

Before each use of the Abrasive Blaster, check and make sure it is in safe working condition. Examine the seals, hoses and other components closely for wear or damage. Replace any damaged or worn component before you begin blasting.

**WARNING :** An Abrasive Blaster must NEVER be used if any of its components are damaged or worn. Replace all damaged or worn parts before using the equipment.

## HOW TO ADD THE ABRASIVE

Before you fill the Abrasive Blaster, be sure that the Inlet Valve is closed and that the Pressure Vessel is depressurized. Pour the abrasive into the top of the Abrasive Blaster. Allow it to flow around the Pop-up and into the Pressure Vessel. Make sure you neither overfill nor allow foreign materials to enter. To prevent foreign items from getting inside, the use of a screen is recommended.

**DANGER :** NEVER reach inside while the Abrasive Blaster is being filled. The pop-up opening can close unexpectedly and cause serious injury or death.

**WARNING :** Abrasives containing silica must NEVER be used with ECO Abrasive Blasters.

**WARNING :** The Inlet Valve must NEVER be open while the Abrasive Blaster is being filled. Before you begin filling, always be sure to close it.

**WARNING :** NEVER use electrically conductive abrasives when the Abrasive Blaster is being used with Electrical Remote Control Systems, unless the sealed strain relief connectors have been changed.

**WARNING :** An Abrasive Blaster containing abrasive must NEVER be moved or transported.

## ABOUT THE REMOTE CONTROL SYSTEM

An electrical or pneumatic Remote Control System (also referred to as "Deadman") must always be used with an Abrasive Blaster to start and stop blasting.

**Electrical :** On the Abrasive Blaster, the Remote Control Handle must be connected to the female twist-lock connector on the Abrasive Blaster. A 12 VDC power source (12-V battery or optional 120 VAC to 12 VDC converter) must be connected to the male twist-lock connector.

**Pneumatic :** The Remote Control twin-line hose must be connected to the Abrasive Blaster using the threaded or quick-disconnect fittings that are supplied. Using pneumatic Remote Control Systems is not recommended with Blast Hoses exceeding 100 feet.

**WARNING :** The Abrasive Blaster must NEVER be operated without a Remote Control System.

**DANGER :** Caution must always be used around electrical sources to avoid electrical shock. Never operate electrically remote-controlled Abrasive Blasters in wet or other hazardous conditions.

## HOW TO CONNECT HOSES

Before you connect hoses to the Abrasive Blaster, be sure the Inlet Valve is closed and the compressed air supply is off. Next, connect the hose from the compressed air supply to the inlet on the Abrasive Blaster and use safety clips to secure it. **Using an air-line pressure regulator is strongly recommended.** Connect the blast hose to the coupling on the Metering Valve at the base of the Abrasive Blaster. Use safety clips to secure it.

**WARNING :** Safety devices, such as clips and whip checks (safety cables), must always be used to secure the hose.

# Blasting

## HOW TO PRESSURIZING THE ABRASIVE BLASTER

**Before you pressurize the Abrasive Blaster, make sure that:**

- All "BEFORE BLASTING" procedures have been carried out.
- The Inlet Valve is shut off.
- The Blow-down Valve is shut off (RC-186 systems only).
- The Remote Control Handle is released.
- Each hose connection is secure and reinforced with a safety clip.
- The Abrasive Blaster is set up in a safe location, on level ground, and everyone nearby has been informed of its presence.
- Anyone who will be near the Abrasive Blaster is wearing the required safety equipment.
- The only persons who will be near the Abrasive Blaster are those who have received the proper training and who have read the manual and understand it.
- Once these conditions are met, you can turn on the compressed air source and open the Inlet Valve on the Abrasive Blaster. At that point, the Abrasive Blaster will be ready for blasting.

**DANGER :** Maintenance must NEVER be done on the Abrasive Blaster nor should anyone try to open it while it is pressurized. Otherwise, serious injury or death will result from the violent expulsion of compressed air and propelled objects.

The compressed air supplied to the Abrasive Blaster should NEVER exceed 150 PSI (10.3 BAR).

**WARNING :** Activating the Remote Control Handle can cause the Blast Hose to kick back. Prepare by bracing yourself. Blasters with MMV-175 Metering Valves usually kick back erratically for a short while when they first start up.

**WARNING :** All persons who will be in the vicinity of the blasting operation must be adequately trained, must have read and understood the manual and must be wearing the necessary safety equipment.

## HOW TO USE THE ABRASIVE BLASTER

To prepare for blasting, pressurize the Abrasive Blaster. To begin the flow of abrasive and compressed air, push the safety flap down and squeeze the Remote Control Handle. To adjust the air-abrasive mixture, turn the handle on the Metering Valve. It will take a bit of time for the adjusted mixture to reach the Nozzle. The delay will vary according to the length of the Blast Hose. Before you make adjustments, stop the Abrasive Blaster by releasing the Remote Control Handle. After a short period, which will again depend on the length of the hose, the flow of compressed air and abrasive will come to a halt. On Pressure Release (RC-176) Abrasive Blasters, the Pressure Vessel automatically exhausts through the Blow-Down valve. This causes a burst of compressed air, which can project loose objects, debris or abrasive toward anyone in the area. Therefore, no one should be close to a Pressure Release (RC-176) Abrasive Blaster during blasting operations.

**DANGER :** Respiratory disease can result from airborne particles generated by abrasive blasting. Anyone involved in the blasting operation or in the vicinity must wear the appropriate NIOSH/OSHA-approved breathing apparatus. Abrasives containing silica must NEVER be used.

**DANGER :** Always stay clear of a Pressure Release (RC-176) Abrasive Blaster while it is running. When the Remote Control Handle is released, compressed air will rush out suddenly and violently from the exhaust valve. You must wait until the Abrasive Blaster is depressurized before adjusting the Metering Valve.

**WARNING :** Only persons who have been fully trained in abrasive blasting should run the Abrasive Blaster. This manual provides only basic information on the safe operation of the features of ECO RC-176/ RC-186 Series Abrasive Blasters..

**WARNING :** You must NEVER point the Blast Nozzle towards anyone, including yourself, or towards the Abrasive Blaster.

**WARNING :** Make sure the Choke Valve is completely open during blasting to prevent damage to the equipment.

# Blasting (end)

## HOW TO DRAIN THE MOISTURE SEPARATOR

The Moisture Separator must be drained periodically during blasting. To do so, it is best to keep the Drain Valve slightly open. This way, air will continuously escape and force the moisture out.

WARNING : The Abrasive Blaster must receive clean, cool, dry compressed air to run properly. Depending on the quality of the air being supplied, the Moisture Separator included with the Abrasive Blaster may not have the capacity to ensure this is the case.

## HOW TO SHUT DOWN THE ABRASIVE BLASTER

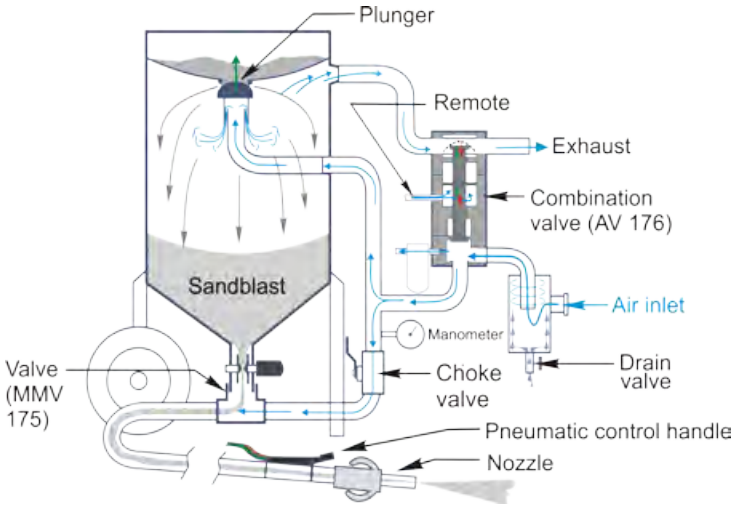
When you have finished blasting, you must shut down the Abrasive Blaster. To do so, release the Remote Control Handle and then shut off the Inlet Valve. In the case of an RC-176 Pressure Release, the Abrasive Blaster will be depressurized by that time.

When using an RC-186 Pressure Hold, make sure that the pneumatic Control Handle is released. Next, shut off the Main Air Supply Valve and slowly open the Blow-Down Valve to let out the compressed air that is stored in the Abrasive Blaster.

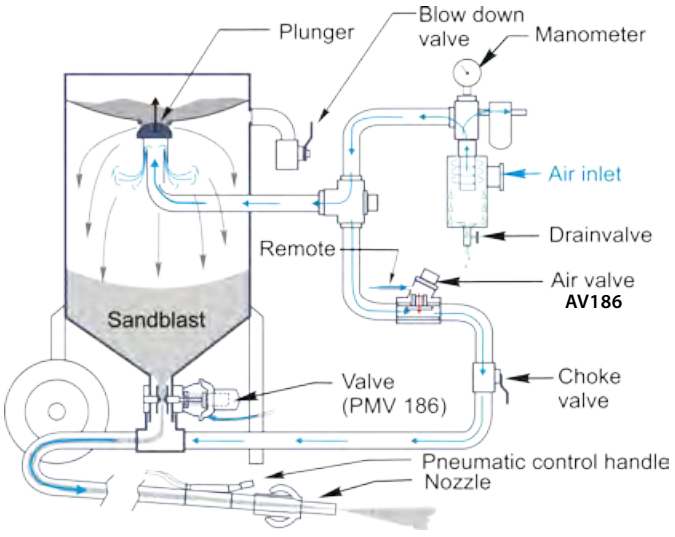
## HOW TO DISCONNECT THE AIR SUPPLY HOSE

Even once you have depressurized the Abrasive Blaster and shut off the Inlet Valve, the Compressed Air Supply Hose may still contain pressure, which must be expelled before you disconnect the hose. To do so, shut off the compressed air at its source and open the Drain Valve on the Abrasive Blaster. Slowly open the Inlet Valve on the Abrasive Blaster. This will allow the compressed air stored in the Compressed Air Supply Hose to exit through the Drain Valve. Once the sound of air escaping through the Drain Valve has stopped, squeeze the Compressed Air Supply Hose and make sure there is no more compressed air left inside. Once this is done, you can disconnect it.

**DANGER :** Compressed Air Supply Hoses must NEVER be disconnected until the "HOW TO DISCONNECT THE AIR SUPPLY HOSE" procedures have been carried out. Otherwise, the hose could blow off violently and injure or kill someone in the area.




RC-176 Pressure Release System




RC-186 Pressure Hold System

# Maintenance Schedule

WARNING : Only experienced, qualified persons should perform maintenance. The maintenance procedures and timetable below must be followed; otherwise, the equipment may perform poorly or fail. Furthermore, the equipment warranty will become void.

**DANGER :** Maintenance must NEVER be done on the Abrasive Blaster nor should anyone try to open it while it is pressurized. Serious injury or death will result from the violent expulsion of compressed air and propelled objects.

| INSPECTIONS AND MAINTENANCE | FREQUENCY |
|---|---|
| 1- Inspect personal protective equipment | Every day |
| 2- Inspect remote control handles and control hose/cord | Every Day |
| 3- Inspect blast hose, couplings & gaskets | Every Day |
| 4- Inspect blasting nozzle | Every Day |
| 5- Inspect air hose, couplings and gasket | Every Day |
| 6- Inspect & clean blow-down muffler (if equipped) | Every Week |
| 7- Inspect pop-up & pop-up gasket | Every Months |
| 8- Service metering valve | Every 3 Months |
| 9- Service combination valve (if equipped) | Every 3 Months |
| 10- Service control valve(s) (if equipped) | Every 3 Months |

# Maintenance Procedures

**1. Inspect Personal Protective Equipment (PPE)**

Inspect all PPE to make sure that it fits and that it is in good working condition. Replace or repair PPE, or have it fitted, as needed.

**2. Inspect Remote Control Handles and Control Hose/Cord**

**Pneumatic Remote Control Systems :**

Inspect the Control Handle to be sure the Safety Flap/Lever Lock/Button is in good working condition. Check for damages, and replace or repair components as needed. Inspect the twin-line hoses and replace them if there are leaks, abrasions or soft spots.

**Electric Remote Control Systems :**

Inspect the Control Handle and make sure the Safety Flap/Lever Lock/Button is in good working condition. Check for damages, and replace or repair components as needed. Inspect the control cord and replace it if there are damaged plug ends or signs of abrasion, exposed wires or cracks

**3. Inspect Blast Hose, Couplings & Gaskets**

Check the Blast Hose for leaks, abrasions and soft spots. Inspect the couplings for damage, leaks and wear. Check the coupling gaskets for leaks and wear. Replace all components as needed. Be sure safety clips and whip checks (safety cables) are used to secure Blast Hose connections.

**4. Inspect Blasting Nozzle**

Check the Blasting Nozzle for wear, and measure the bore diameter. If the bore diameter is worn to the point of being 1/16 in. larger than its original diameter, replace the Blasting Nozzle. For instance, a #5 Nozzle (5/16 in. bore) needs to be replaced when the bore reaches 3/8 in.

**5. Inspect Air Hose, Couplings & Gaskets**

Check the Air Hose for leaks, abrasions and soft spots. Check the couplings for damage, leaks and wear. Check the coupling gaskets for leaks and wear. Replace all components as needed. Be sure safety clips and whip checks (safety cables) are used to secure Air Hose connections.

**6. Inspect & Clean Blow-down Muffler**

Remove the Blow-Down Muffler and turn it upside down. Tap it on a hard surface to free any debris that may be trapped inside. Replace the muffler if it is blocked and the obstruction cannot be cleared

**7. Inspect Blow-down Hose Assembly**

Remove and inspect the Blow-Down Hose Assembly. Replace it if you find leaks or soft spots.

**8. Inspect Pop-Up & Pop-Up Gasket**

Check the Pop-up and Pop-up Gasket for wear. Replace as needed

**9. Service Metering Valve**

Disassemble and clean the Metering Valve. Check for worn components and make sure it is working properly. Replace any worn components. Lubricate the MMV-175 and PMV-186 valves with an anti-seize compound before reassembly.

**10. Service Air Valve AV-186**

Disassemble and clean the valve. Check for worn components and make sure it is working properly. Replace any worn components. Lubricate with an anti-seize compound before reassembly.

**11. Service Combination Valve AV-176**

Disassemble and clean the valve. Check for worn components and make sure it is working properly. Replace any worn components. Lubricate with an anti-seize compound before reassembly.

**12. Service Control Valve(s)**

Disassemble and clean the valve(s). Check for worn components and make sure everything is working properly. Replace any worn components. Lubricate with an anti-seize compound before reassembly

# Troubleshooting

**DANGER : The Abrasive Blaster must NEVER be opened while it is pressurized. Extreme caution is required when troubleshooting involves pressurizing the Abrasive Blaster. Only experienced, qualified persons should perform troubleshooting procedures.**

## ABRASIVE NOT FLOWING DURING BLASTING (AIR ONLY)

### Possible Causes :

1. The Abrasive Blaster is empty.

   The abrasive cut-off function (if equipped) is engaged and is preventing the abrasive from flowing.

2. **The Metering Valve is closed or not properly adjusted.**

   If you suspect that a PMV-186 Metering Valve is not opening, conduct the following test : Shut off the Metering Valve completely by turning the knob clockwise until it stops. Next, turn it counterclockwise about 9 full turns. Then, depress the Control Handle and check if the knob is difficult to turn or does not turn at all If so, the Metering Valve is opening properly.

3. **There is a blockage in the Metering Valve.**

   To free the blockage from a PMV-186 Metering Valve, begin by turning the knob on the Metering Valve clockwise until it stops. Then, turn the knob counterclockwise 9 full turns so it is fully open. Depress the Control Handle and have a second qualified person close the choke valve for 2 seconds and then re-open it immediately. Minor obstructions, such as paint chips, a bit of wet abrasive or a piece of paper, will be forced through the Metering Valve and out the Nozzle. Turn the Metering Valve back to the required blast setting and check if the obstruction has been removed.

If there is still a blockage, depressurize the Abrasive Blaster, remove the Pusher Line and the Metering Valve and check if there is a steady stream of abrasive. If so, allow the Abrasive Blaster to empty, and then reinstall the Metering Valve.

If you find a large obstruction, you will have to remove it from inside the Pressure Vessel. To do so, start by making sure that the Abrasive Blaster is depressurized. Next, remove the Handway Assembly, scoop or vacuum all the abrasive out of the Pressure Vessel, and then remove the obstruction. You can then reinstall the Handway Assembly and the Metering Valve. Be sure to tighten them securely. Once this is done, you can refill the Abrasive Blaster.

It is advisable to use a screen to keep foreign objects from getting inside the Abrasive Blaster and causing a blockage.

4. **There is wet abrasive in the Abrasive Blaster.**

   The wet abrasive must be removed. To do so, depressurize the Abrasive Blaster, remove the Handway Assembly and scoop or vacuum out the wet abrasive.

**The Abrasive Blaster must always be used with dry abrasive and supplied with clean, cool, dry air to keep the abrasive dry. For outdoor operations, using a lid is recommended to prevent water from getting inside the Abrasive Blaster.**

## ABRASIVE STREAM TOO HEAVY OR THROBBING DURING BLASTING

### Possible Causes :

Note : When RC-176 systems first start up, they may throb for a while if there is an accumulation of abrasive in the blast hose from a previous operation. This is normal, and no corrective action is needed.

1. **The Choke Valve is partially closed.**

The Abrasive Blaster should be operated ONLY with the Choke Valve fully open. Doing otherwise will cause

### 2. The Metering Valve needs adjusting.

Refer to the instructions on page 10 on how to adjust Metering Valves.

# Troubleshooting (cont'd)

**DANGER : The Abrasive Blaster must NEVER be opened while it is pressurized. Extreme caution is required when troubleshooting involves pressurizing the Abrasive Blaster. Only experienced, qualified persons should perform troubleshooting procedures.**

## LOW PRESSURE AT THE NOZZLE

Possible Causes :

1. The air compressor is too small or the load button is not activated.
2. The Nozzle is worn out, creating too much demand for the compressor.
3. The hose supplying air to the blaster is too small.
4. There is a hole in the blast hose.
5. The pop-up is not sealing properly.
6. There are one or more leaks in the Handway Assembly.
7. The Inlet Air Valve is dirty or blocked.
8. The lower plunger (if equipped) in the Inlet Air Valve is damaged, faulty or worn out.
9. The Choke Valve is partially closed. The Abrasive Blaster should be operated ONLY with the Choke Valve fully open. Doing otherwise will cause damage to the Abrasive Blaster.
10. The Abrasive Metering Valve is open too far.
11. The Nozzle is blocked.
12. The Regulator (if equipped) needs adjusting.

## ABRASIVE BLASTER DOES NOT TURN ON OR IS SLOW TO DO SO

**Possible Causes :**

1. The air compressor is too small or the load button is not activated.
2. The Nozzle is worn out, creating too much demand for the compressor.
3. The hose supplying air to the blaster is too small.
4. There are one or more leaks in the control hoses and/or fittings.
5. The Nozzle is blocked.
6. The Inlet Air Valve is dirty or blocked.
7. The Pneumatic Control Handle (if equipped) is faulty, damaged or worn out.
8. The Electrical Control Handle (if equipped) is faulty, damaged or worn out.
9. The Electrical Control coil or coils (if equipped) are faulty.
10. The Power Source (battery or AC-DC converter) is not generating enough power to open the electrical control valves (if equipped).
11. The Control Valve (if equipped) needs servicing due to insufficient lubrication, or it is jammed, faulty, damaged or worn out.

# Troubleshooting (end)

**DANGER : The Abrasive Blaster must NEVER be opened while it is pressurized. Extreme caution is required when troubleshooting involves pressurizing the Abrasive Blaster. Only experienced, qualified persons should perform troubleshooting procedures.**

## BLAST MACHINE TURNS ON ACCIDENTALLY OR UNEXPECTEDLY

### Possible Causes :

1. The safety flap, lever or lock button on the Control Handle is damaged or missing.
2. The Pneumatic Control Handle (if equipped) is faulty, damaged or worn out.
3. The Electrical Control Handle (if equipped) is faulty, damaged or worn out.
4. The Electrical Control Cord (if equipped) is faulty, damaged or worn out (if equipped).

## BLAST MACHINE TURNS OFF TOO SLOWLY OR DOES NOT TURN OFF WHEN CONTROL HANDLE IS RELEASED

### Possible Causes :

1. The Pneumatic Control Handle (if equipped) is faulty, damaged or worn out
2. .The Electrical Control Handle (if equipped) is faulty, damaged or worn out.
3. The Electrical Control Cord (if equipped) is faulty, damaged or worn out.
4. The Air Valve (if equipped) needs servicing due to insufficient lubrication, or it is jammed, faulty, damaged or worn out.
5. The Combination Valve Assembly (if equipped) is not seating properly because it is faulty, damaged or worn out.
6. An obstruction in the Blow-Down Muffler is hindering the release of air. .

## AIR BLAST STOPS BUT ABRASIVE CONTINUES TO FLOW WHEN CONTROL HANDLE IS RELEASED (APPLIES ONLY TO SYSTEMS WITH PMV-186 SERIES METERING VALVES)

### Possible Causes :

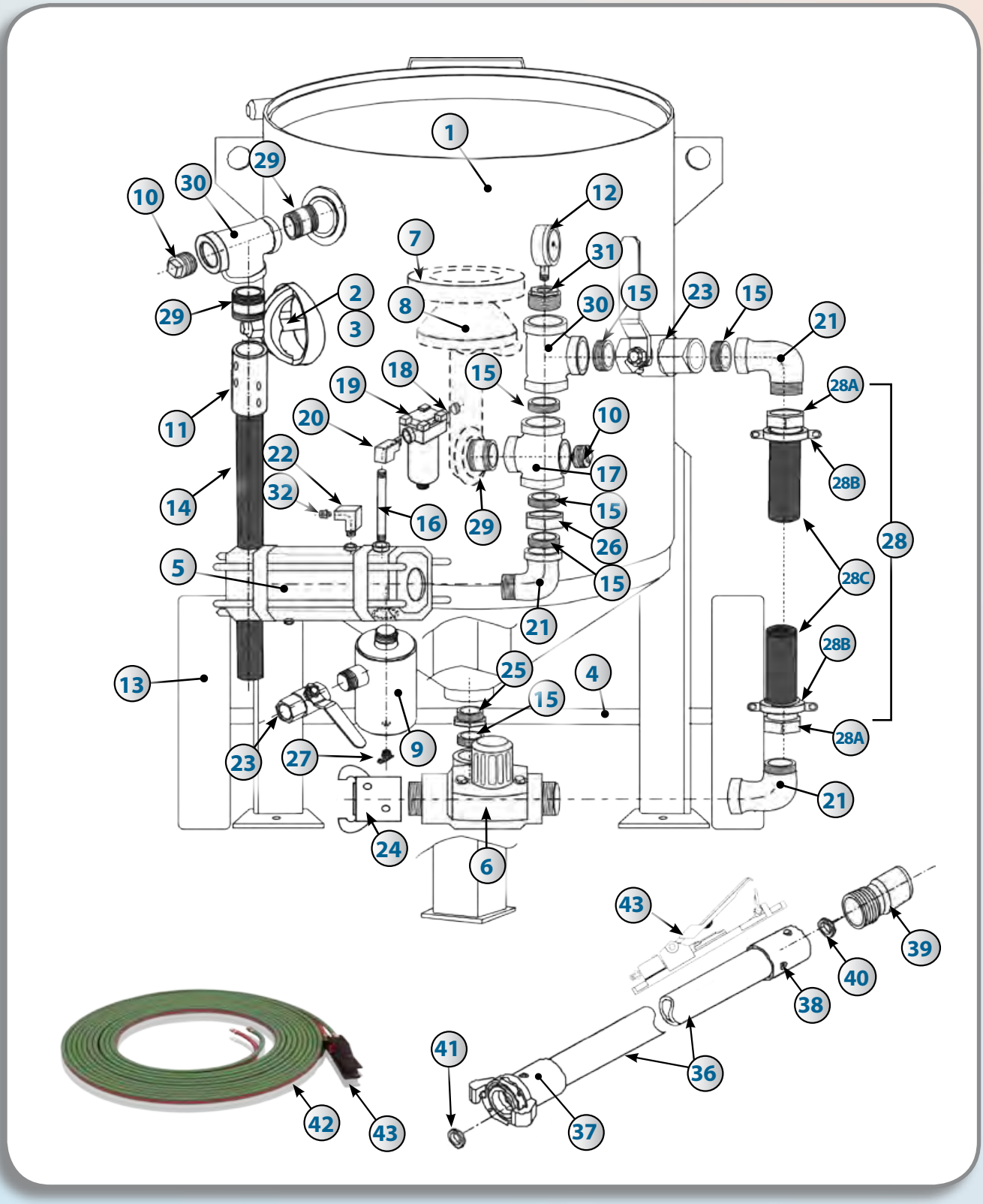
1. The Urethane Seat (black) in the Metering Valve is faulty, damaged or worn out.
2. The MN2 Sleeve in the Metering Valve is faulty, damaged or worn out.
3. The MN2 Plunger in the Metering Valve is faulty, damaged or worn out.
4. Foreign material is jammed between the Plunger and the Metering Valve Seat.
5. The Metering Valve Spring is faulty, damaged or worn out.

## ABRASIVE STOPS FLOWING BUT AIR BLAST CONTINUES WHEN CONTROL HANDLE IS RELEASED

### Possible Causes :

1. The lower plunger in the AV-176 or AV-186 Air Valve is faulty, damaged or worn out.
2. The piston seal in the AV-176 or AV-186 is faulty, damaged or worn out.
3. The O-ring in the AV-176 or AV-186 Valve is faulty, damaged or worn out.

# RC-176 assembly - Exploded view



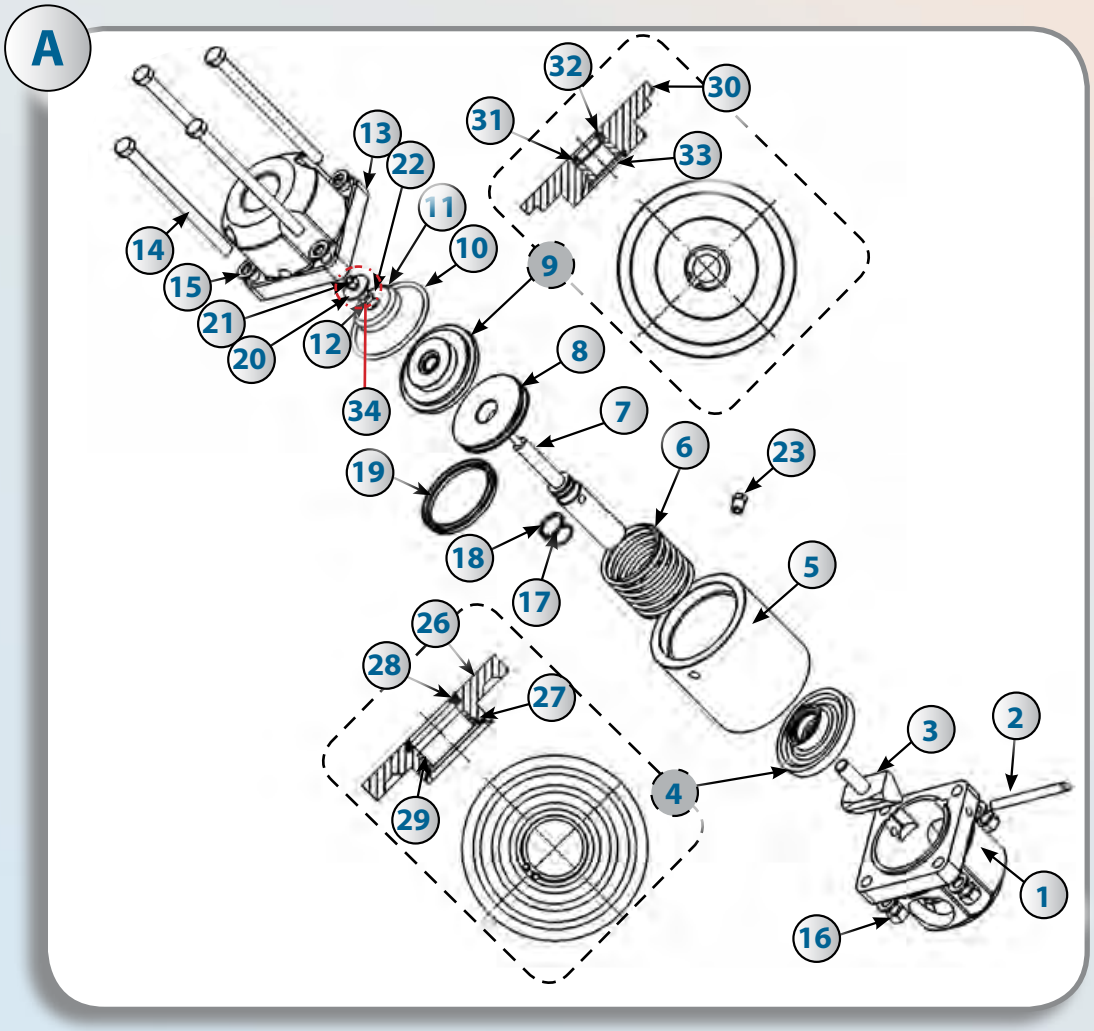
# RC-176 assembly - Parts list

| # | STOCK | DESCRIPTION |
|---|---|---|
| 1 | 713000 | PRESSURE VESSEL ONLY (346) |
| | 723000 | PRESSURE VESSEL ONLY (646) |
| 2 | 610056 | ACCESS DOOR KIT |
| | 740102 | ACCESS DOOR KIT (LG SERIE) |
| 3 | 618241 | ACCESS DOOR GASKET |
| | 740101 | ACCESS DOOR GASKET (LG SERIE) |
| 4 | 740001 | AXLE (MODEL 346) |
| | 740002 | AXLE (MODEL 646) |
| 5 | 608821 | AIR VALVE AV-176 ❁ |
| 6 | 770070 | MMV-175 VALVE ASSEMBLY ❁ ❁ |
| 7 | 740004 | "O" RING |
| | 740100 | "O" RING (LG SERIE) |
| | 740104 | "O" RING FOR 10 pi³ (LG SERIE) |
| 8 | 740007 | 5" PLUNGER |
| | 610044 | 5" PLUNGER (LG SERIE) |
| 9 | 611053 | 1¼" MOISTURE SEPARATOR |
| 10 | 630884 | 1¼" PLUG |
| 11 | 607051 | NH-¾" ALUM. NOZZLE HOLDER |
| 12 | 611022 | ¼" NTP GAUGE |
| 13 | 740006 | WHEEL |
| 14 | 606003 | HOSE ¾" SBH |
| 15 | 630801 | 1¼" NIPPLE CLOSE |
| 16 | 630111 | NIPPLE 6" X ¼" |
| 17 | 630838 | CROSS 1¼" |
| 18 | 632214 | HEX NIPPLE ¼" x 1/8" |
| 19 | 611035 | AIR LINE FILTER |
| 20 | 632232 | ¼" BRASS STREET ELBOW |
| 21 | 630851 | 1¼" X 90° ELBOW MF |
| 22 | 632026 | 1/8" BRASS STREET ELBOW |
| 23 | 608105 | 1¼" BALL VALVE |
| 24 | 607074 | TANK COUPLING 1¼" NYLON |
| 25 | 631151 | 2" X 1¼" REDUCER |

| # | STOCK | DESCRIPTION | |
|---|---|---|---|
| 26 | 630890 | UNION PA 1¼" | |
| 27 | 608230 | DRAIN COCK VALVE | |
| 28 | 770100 | PUSH LINE HOSE ASS'Y (28A-B-C) | |
| 28A | 607087 | HOSE INSERT SWIVEL 1¼" | |
| 28B | 607088 | DOUBLE BOLT CLAMP | |
| 28C | 770101 | PUSH LINE HOSE 30" X 1¼" | |
| 29 | 630805 | NIPPLE 3" X 1¼" | |
| 30 | 630840 | "T" 1¼" X 1¼" | |
| 31 | 630864 | 1¼" X ¼" COUPLING | |
| 32 | 632214 | REDUCER NIPPLE ¼" X 1/8" | |
| 36 | 776100 | MOD. 346 | 50' X 1" HOSE ASS'Y C/W FITTING QCN-NHN |
| | 776101 | | 50' X 1" HOSE ASS'Y W/O FITTING |
| | 776102 | | 50' HOSE EXTENSION C/W FITTING QCN-QCN |
| | 776125 | MOD. 646 | 50' X 1¼" HOSE ASS'Y C/W FITTING QCN-NHN |
| | 776127 | | 50' 1¼" HOSE ASS'Y W/O FITTING |
| | 776128 | | 50' HOSE EXTENSION C/W FITTING QCN-QCN |
| 37 | 607001 | QCN - 1" QUICK SNAP FITTING (346) | |
| | 607011 | QCN - 1¼" QUICK SNAP FITTING (646) | |
| 38 | 607018 | NHN - 1" NOZZLE COUPLING (346) | |
| | 607019 | NHN - 1¼" NOZZLE COUPLING (646) | |
| 39 | 605204 | DVC-4 STD. TUNGST. VENTURI NOZZLE MODEL 346 | |
| | 605205 | DVC-5 STD. TUNGST. VENTURI NOZZLE MODEL 646 | |
| 40 | 618016 | NW-1 NOZZLE WASHER | |
| 41 | 618005 | QCN-O QUICK SNAP FITTING WASHER | |
| 42 | 606193 | DUAL LINE REMOTE CONTROL HOSE 55' C/W FITTING | |
| 43 | 908006 | PNEUMATIC DEADMAN CONTROL HANDLE ❁ ❁ ❁ | |

❁ *See details parts page 19*
❁ ❁ *See details parts page 20*
❁ ❁ ❁ *See details parts page 30*

# AV-176 Air valve assembly - Exploded view



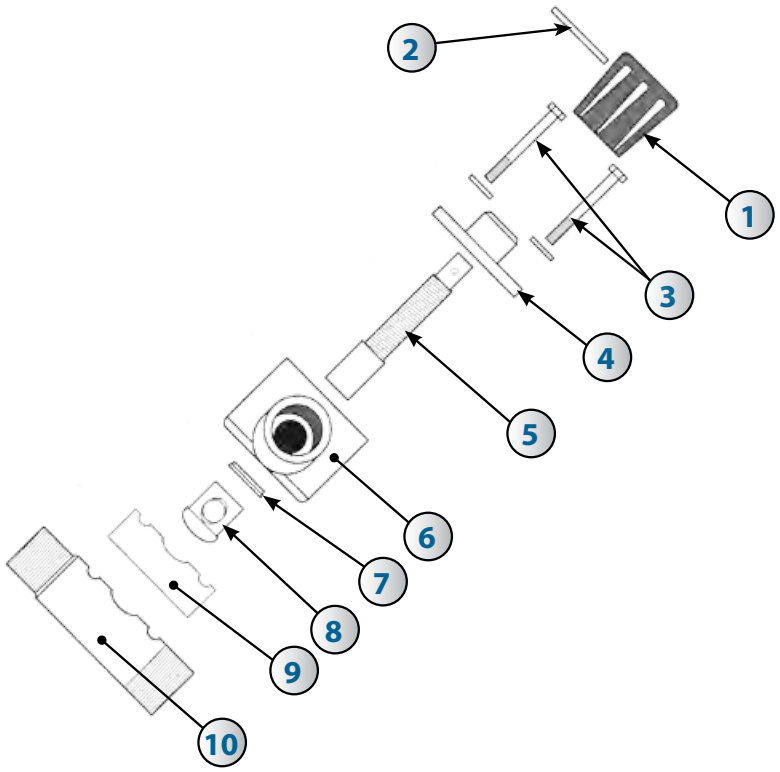

| A | 608821 | AV-176 COMPLETE VALVE ASS'Y |
|---|---|---|

| # | STOCK CODE | DESCRIPTION |
|---|---|---|
| 1 | 770181 | CAP |
| 2 | 770191 | PIN |
| 3 | 770186 | PINCH RAM |
| 4 | 770184 | UPPER ROD ASS'Y , INCLUDE : ITEMS 26, 27, 28, 29 |
| 5 | 770192 | CYLINDER |
| 6 | 770187 | SPRING |
| 7 | 770188 | SHAFT |
| 8 | 770189 | PISTON |
| 9 | 770185 | LOWER ROD ASS'Y , NCLUDE : ITEMS 30, 31, 32, 33 |
| 13 | 770196 | BASE |
| 14 | 770197 | HEX HEAD BOLT |
| 15 | 770198 | FLAT WASHER |
| 16 | 770199 | NUT |
| 20 | 770213 | FLAT WASHER |
| 23 | 770216 | EXHAUST FILTER |

| # | STOCK CODE | DESCRIPTION |
|---|---|---|
| 10 | SEAL KIT 770182 | VALVE PLUG |
| 11 | | O-RING |
| 12 | | BASE |
| 17 | | O-RING |
| 18 | | EXTERNAL CIRCLIP |
| 19 | | PISTON SEAL (770190) |
| 21 | | LOCK NUT |
| 22 | | CURVED SPRING WASHER |
| 28 | | UPPER ROD SEAL |
| 29 | | CIRCLIP |
| 32 | | LOWER ROD SEAL |
| 26 | 770219 | UPPER ROD GUIDE |
| 27 | 770220 | UPPER ROD GUIDE BUSH |
| 30 | 770223 | LOWER ROD GUIDE |
| 31 | 770224 | LOWER ROD GUIDE BUSH |
| 32 | 770225 | LOWER ROD SEAL |
| 33 | 770226 | CIRCLIP |
| (34) | PLUG KIT 770183 | INCLUDE : ITEMS 11,12, 20, 21, 22 |

# Abrasive metering valve MMV-175 - Exploded view

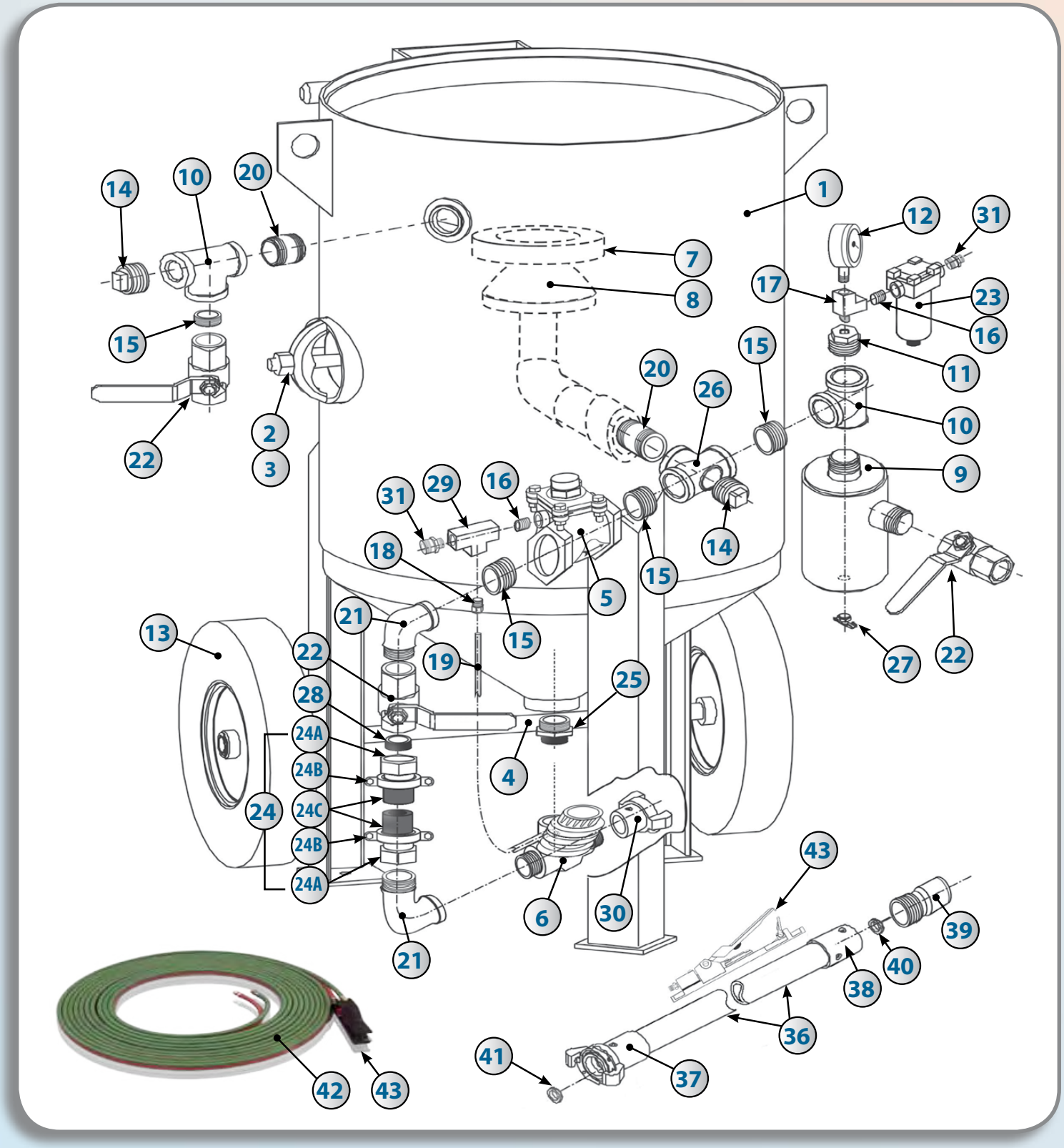
B




| # | STOCK | DESCRIPTION | # | STOCK | DESCRIPTION |
|---|---|---|---|---|---|
| 1 | 770069 | KNOB | 6 | 770076 | BODY |
| 2 | 770079 | ROLL PIN | 7 | 770072 | SEAL |
| 3 | 770078 | BOLT C/W WASHER | 8 | 770074 | URETHANE SLEEVE |
| 4 | 770077 | CAP | 9 | 770075 | GASKET |
| 5 | 770073 | PLUNGER | 10 | 770071 | PIPE NIPPLE 1¼" FEM. X 1¼" MAL. |

| | | |
|---|---|---|
| B | 770070 | MMV-175 COMPLETE AIR VALVE ASSEMBLY |

# RC-186 assembly - Exploded view



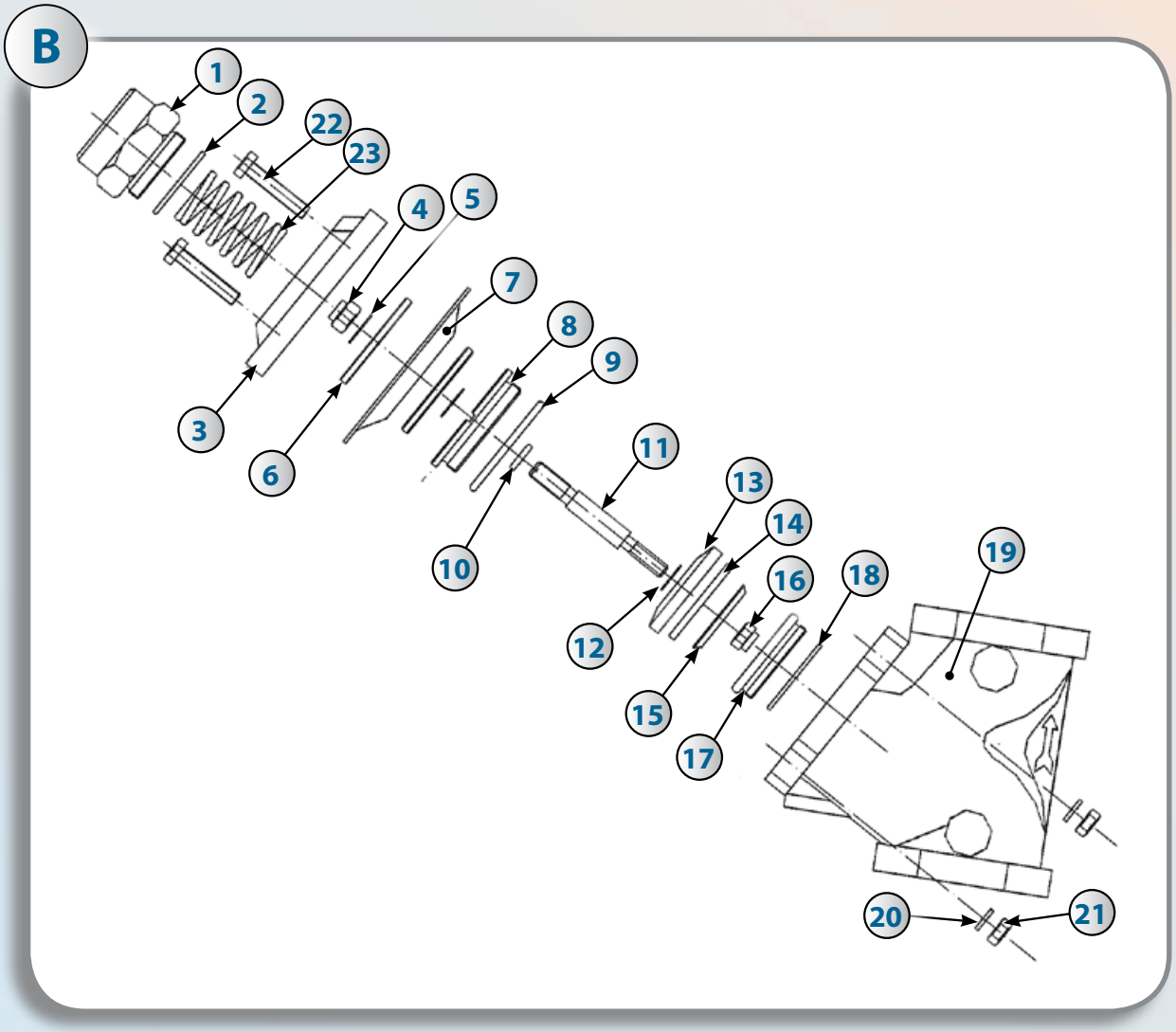
# RC-186 assembly - Parts list

| # | STOCK | DESCRIPTION |
|---|---|---|
| 1 | 713000 | PRESSURE VESSEL ONLY (346) |
| | 723000 | PRESSURE VESSEL ONLY (646) |
| 2 | 610056 | ACCESS DOOR KIT |
| | 740102 | ACCESS DOOR KIT (LG SERIE) |
| 3 | 618241 | ACCESS DOOR GASKET |
| | 740101 | ACCESS DOOR GASKET (LG SERIE) |
| 4 | 740001 | AXLE (MODEL 346) |
| | 740002 | AXLE (MODEL 646) |
| 5 | 608822 | AIR VALVE AV-186 ❁ |
| 6 | 608845 | PMV-186 VALVE ASSEMBLY ❁ ❁ |
| 7 | 740004 | "O" RING |
| | 740100 | "O" RING (LG SERIE) |
| | 740104 | "O" RING FOR 10 $pi^3$ (LG SERIE) |
| 8 | 740007 | 5" PLUNGER |
| | 610044 | 5" PLUNGER (LG SERIE) |
| 9 | 611053 | 1¼" MOISTURE SEPARATOR |
| 10 | 630840 | 1¼" "T" COUPLING |
| 11 | 630864 | 1¼" x ¼" COUPLIN |
| 12 | 611022 | ¼" NTP GAUGE |
| 13 | 740006 | WHEEL |
| 14 | 630884 | 1¼" PLUG |
| 15 | 630801 | 1¼" NIPPLE CLOSE |
| 16 | 632202 | NIPPLE ¼" |
| 17 | 632226 | STREET "T" ¼" |
| 18 | 324570 | PUSH IN FITTING 1/8" |
| 19 | 324571 | BLUE TUBING AIR LINE |
| 20 | 630805 | NIPPLE 3" X 1¼" |
| 21 | 630851 | 1¼" X 90° ELBOW MF |
| 22 | 608105 | 1¼" BALL VALVE |
| 23 | 611035 | AIR LINE FILTER |

| # | STOCK | DESCRIPTION | |
|---|---|---|---|
| 24 | 770100 | PUSH LINE ASSEMBLY (24A-B-C) | |
| 24A | 607087 | HOSE INSERT SWIVEL 1¼" | |
| 24B | 607088 | DOUBLE BOLT CLAMP | |
| 24C | 770101 | PUSH LINE HOSE 30" X 1¼" | |
| 25 | 770180 | 2" X 1¼" REDUCER BST | |
| 26 | 630838 | 1¼" COUPLING CROSS | |
| 27 | 608230 | DRAIN COCK VALVE | |
| 28 | 630801 | 1¼" NIPPLE CLOSE | |
| 29 | 632018 | TEE 1/8" | |
| 30 | 607074 | TANK COUPLING 1¼" NYLON | |
| 31 | 632214 | REDUCER NIPPLE ¼" X 1/8" | |
| 36 | 776100 | MOD. 346 | 50' X 1" HOSE ASS'Y C/W FITTING QCN-NHN |
| | 776101 | | 50' X 1" HOSE ASS'Y W/O FITTING |
| | 776102 | | 50 ' HOSE EXTENSION C/W FITTING QCN-NHN |
| | 776125 | MOD. 646 | 50' X 1¼" HOSE ASS'Y C/W FITTING QCN-NHN |
| | 776127 | | 50' 1¼"HOSE ASS'Y W/O FITTING |
| | 776128 | | 50 ' HOSE EXTENSION C/W FITTING QCN-NHN |
| 37 | 607001 | QCN - 1" QUICK SNAP FITTING (346) | |
| | 607011 | QCN - 1¼" QUICK SNAP FITTING (646) | |
| 38 | 607018 | NHN - 1" NOZZLE COUPLING (346) | |
| | 607019 | NHN - 1¼" NOZZLE COUPLING (646) | |
| 39 | 605204 | DVC-4 STD. TUNGST. VENTURI NOZZLE MODEL 346 | |
| | 605205 | DVC-5 STD. TUNGST. VENTURI NOZZLE MODEL 646 | |
| 40 | 618016 | NW-1 NOZZLE WASHER | |
| 41 | 618005 | QCN-O QUICK SNAP FITTING WASHER | |
| 42 | 606193 | DUAL LINE REMOTE CONTROL HOSE 55' C/W FITTING | |
| 43 | 908006 | PNEUMATIC DEADMAN CONTROL HANDLE ❁ ❁ ❁ | |

❁ *See details parts page 23*
❁ ❁ *See details parts page 24*
❁ ❁ ❁ *See details parts page 30*

# Air valve AV-186 - Exploded view



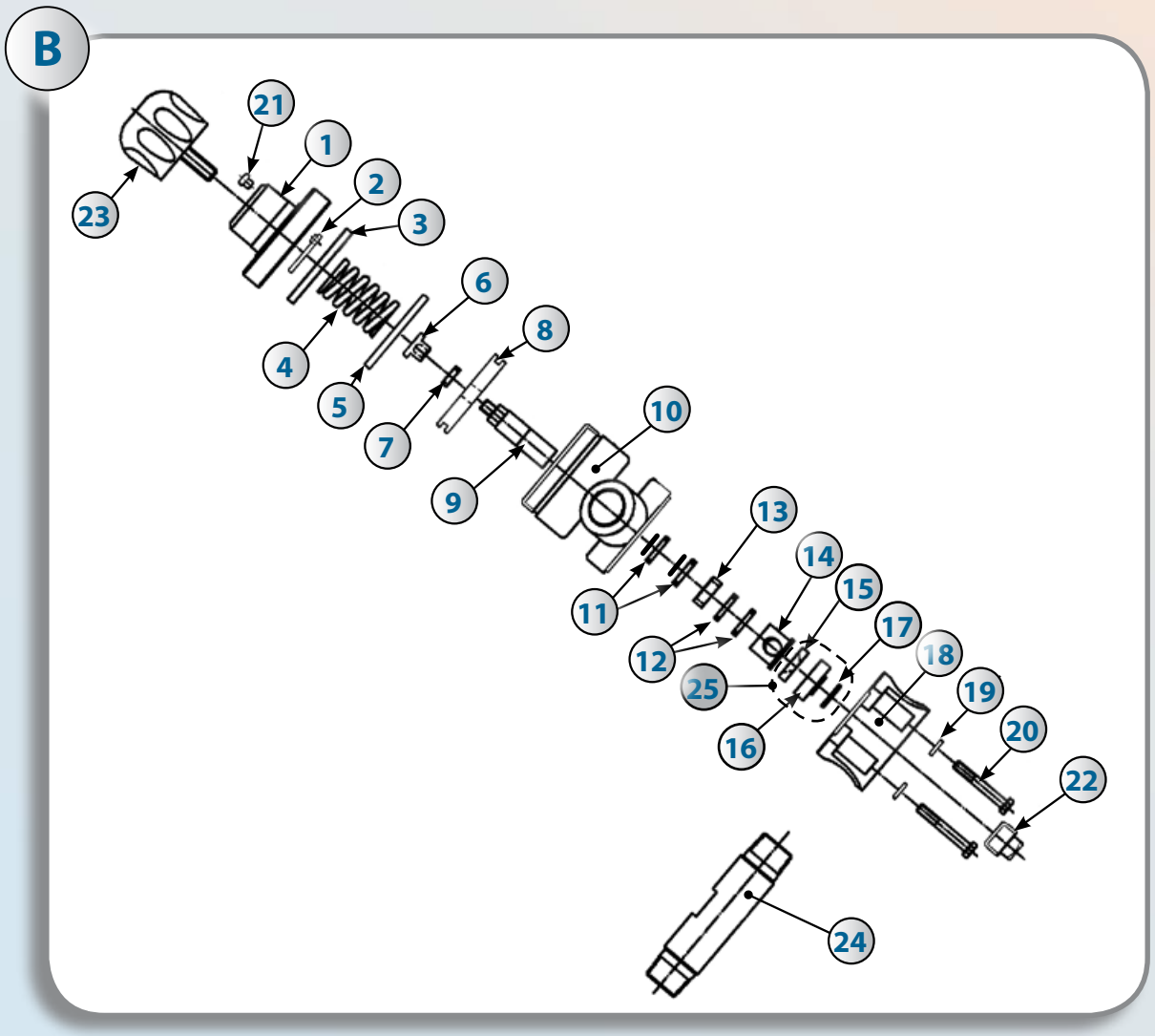

| B | 608822 | AIR VALVE AV-186 : COMPLETE VALVE ASS'Y |
|---|---|---|

| # | STOCK CODE | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | | CAP | 1 |
| 2 | ❁ | O-RING 31.5mm x 2mm | 1 |
| 3 | | COVER | 1 |
| 4 | ❁ | LOCK NUT 5/16" UNF | 1 |
| 5 | ❁ | FLAT WASHER 8mm | 2 |
| 6 | | FLAT WASHER | 2 |
| 7 | ❁ | DIAPHRAGM | 1 |
| 8 | | GUIDE BUSH | 1 |
| 9 | ❁ | O-RING 45mm x 3mm | 1 |
| 10 | ❁ | O-RING 9mm x 2.65mm | 1 |
| 11 | | SHAFT | 1 |
| 12 | ❁ | FLAT WASHER | 1 |
| 13 | | SEAT HOLDER | 1 |
| 14 | ❁ | RUBBER GASKET | 1 |

| # | STOCK CODE | DESCRIPTION | QTY |
|---|---|---|---|
| 15 | | RETAINER | 1 |
| 16 | ❁ | LOCK NUT 1/4" UNF | 1 |
| 17 | | INNER BUSH | 1 |
| 18 | ❁ | O-RING 34mm x 1.8mm | 1 |
| 19 | | BODY | 1 |
| 20 | | SPRING WASHER 1/4" | 4 |
| 21 | | NUT 1/4" UNC | 4 |
| 22 | | HEX HEAD MACHINE SCREW ¼" UNC X 35mm | 4 |
| 23 | | SPRING | 1 |

❁ *Service kit available only :*
*608823 = # 2, 4, 5, 7, 9, 10, 12, 14,16, 18.*

# Abrasive metering valve PMV-186 - Exploded view

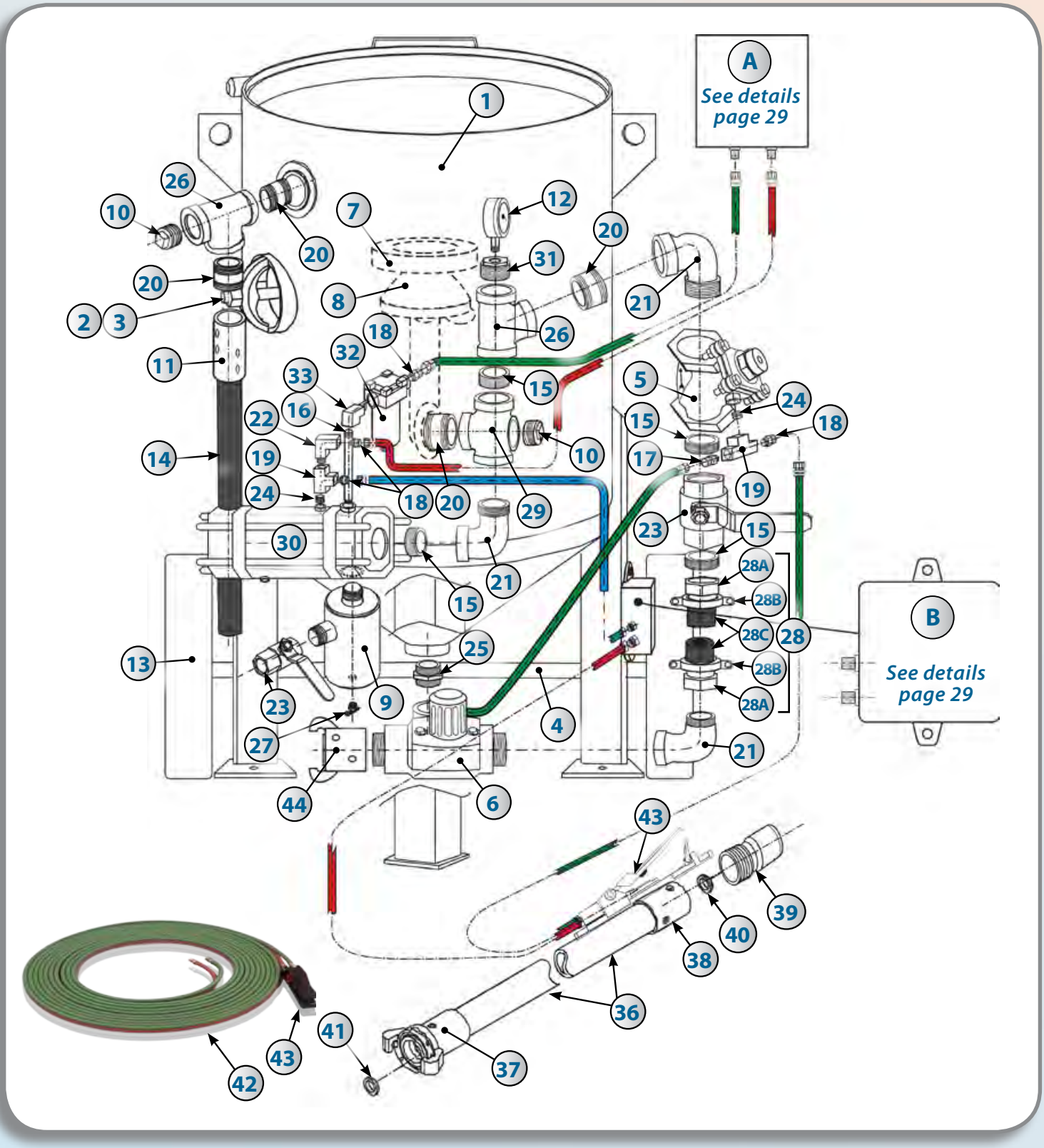



| | | |
|---|---|---|
| A | 608845 | PMV-186 COMPLETE VALVE ASS'Y |

| # | STOCK CODE | DESCRIPTION |
|---|---|---|
| 1 | 770022 | TOP |
| 2 | 770201 | ANTI-VIBRATION WASHER |
| 3 | 770023 | STOP RING |
| 4 | 770024 | SPRING |
| 5 | 770213 | PISTON SEAL |
| 6 | 770202 | PLUNGER COVER |
| 7 | 770203 | NYLON WASHER |
| 8 | 770213 | PISTON |
| 9 | 770204 | TUNGSTENE PLUNGER |
| 10 | 770121 | CYLINDER |
| 11 | 608830 | PLUNGER SEAL C/WITH O-RING |
| 12 | 770030 | PLUNGER SEAL C/WITHOUT O-RING |
| 13 | 770206 | BUSH |
| 14 | 608832 | TUNGSTEN CARBIDE SLEEVE |

| # | STOCK CODE | DESCRIPTION |
|---|---|---|
| 15 | 608840 | URETHANE SEAT |
| 16 | 608841 | SEAT HOLDER |
| 17 | 608839 | O-RING |
| 18 | 770032 | BASE |
| 19 | 770207 | FLAT WASHER |
| 20 | 770033 | HEX HEAD BOLT |
| 21 | 770208 | EXHAUST FILTER |
| 22 | 770209 | SQUARE HEAD PLUG |
| 23 | 770021 | CONTROL KNOB |
| 24 | 770034 | 1 ¼" X 1 ¼" PIPE NIPPLE |
| 25 | 770211 | TUNGSTEN SEAT KIT INCLUDE : #15, 16, 17 |
| 26 | KIT 770210 | INCLUDE ITEMS # 5,11,12, 13, 14, AND 15, 16, 17 |

# RC176/RC186 assembly - Exploded view



# RC176/RC186 assembly - Parts list

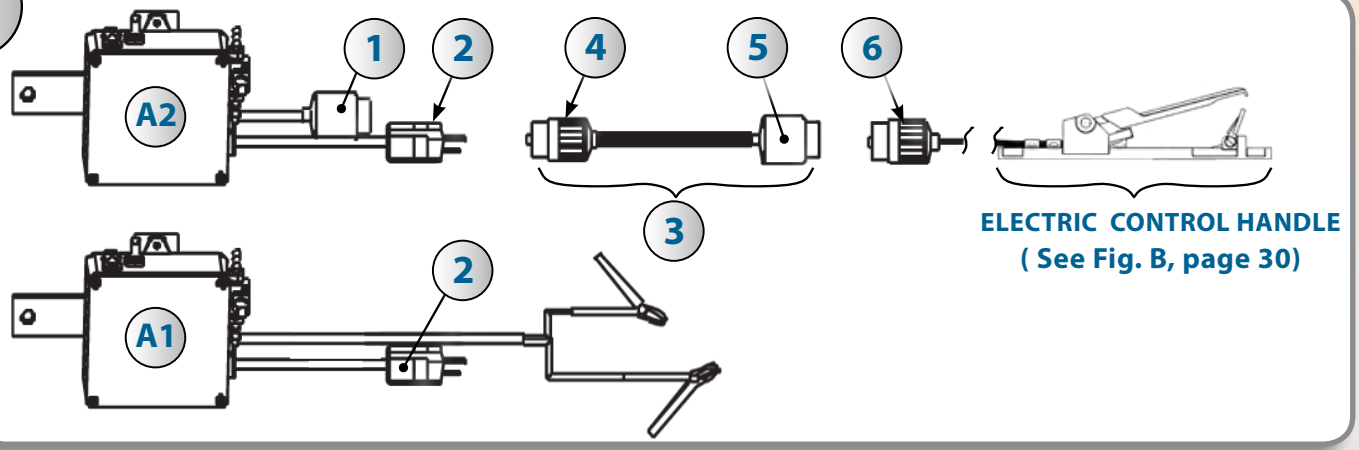
| # | STOCK | DESCRIPTION |
|---|---|---|
| 1 | 713000 | PRESSURE VESSEL ONLY (346) |
| | 723000 | PRESSURE VESSEL ONLY (646) |
| 2 | 610056 | ACCESS DOOR KIT |
| | 740102 | ACCESS DOOR KIT (LG SERIE) |
| 3 | 618241 | ACCESS DOOR GASKET |
| | 740101 | ACCESS DOOR GASKET (LG SERIE) |
| 4 | 740001 | AXLE (MODEL 346) |
| | 740002 | AXLE (MODEL 646) |
| 5 | 608822 | AIR VALVE AV-186 ❁ |
| 6 | 608845 | PMV-186 VALVE ASSEMBLY ❁❁ |
| 7 | 740004 | "O" RING |
| | 740100 | "O" RING (LG SERIE) |
| | 740104 | "O" RING FOR 10 pi³ (LG SERIE) |
| 8 | 740007 | 5" PLUNGER |
| | 610044 | 5" PLUNGER (LG SERIE) |
| 9 | 611053 | 1¼" MOISTURE SEPARATOR |
| 10 | 630884 | 1¼" PLUG |
| 11 | 607051 | NH-¾" ALUM. NOZZLE HOLDER |
| 12 | 611022 | ¼" NTP GAUGE |
| 13 | 740006 | WHEEL |
| 14 | 606003 | HOSE ¾" SBH |
| 15 | 630801 | 1¼" NIPPLE CLOSE |
| 16 | 630111 | NIPPLE 6" X ¼" |
| 17 | 324570 | PUSH IN 1/8" |
| 18 | 632214 | ADAPTOR 1/4" TO 1/8" |
| 19 | 632018 | TEE 1/8" FF |
| 20 | 630805 | NIPPLE 3" X 1¼" |
| 21 | 630851 | 1¼" X 90° ELBOW MF |
| 22 | 632026 | STREET ELBOW 1/8" |
| 23 | 608105 | 1¼" BALL VALVE |
| 24 | 632002 | HEX. NIPPLE 1/8" |
| 25 | 770180 | 2" X 1¼" REDUCER BST |
| 26 | 630840 | TEE 1¼" |

| # | STOCK | DESCRIPTION | |
|---|---|---|---|
| 27 | 608230 | DRAIN COCK VALVE | |
| 28 | 770100 | PUSH LINE HOSE ASS'Y (28-A-B-C) | |
| 28A | 607087 | SWIVEL HOSE INSERT 1¼" | |
| 28B | 607088 | DOUBLE BOLT CLAMP | |
| 28C | 770101 | PUSH LINE HOSE 30" X 1¼" | |
| 29 | 630838 | 1¼" COUPLING CROSS | |
| 30 | 608821 | AV 176 VALVE ASS'Y ❁❁❁ | |
| 31 | 630864 | 1 ¼" X ¼" COUPLING | |
| 32 | 611035 | AIR LINE FILTER | |
| 33 | 632232 | ELBOW ¼" x 90° MF | |
| 36 | 776100 | MOD. 346 | 50' X 1" HOSE ASS'Y C/W FITTING QCN-NHN |
| | 776101 | | 50' X 1" HOSE ASS'Y W/O FITTING |
| | 776102 | | 50 ' HOSE EXTENSION C/W FITTING QCN-QCN |
| | 776125 | MOD. 646 | 50' X 1¼" HOSE ASS'Y C/W FITTING QCN-NHN |
| | 776127 | | 50' 1¼" HOSE ASS'Y W/O FITTING |
| | 776128 | | 50 ' HOSE EXTENSION C/W FITTING QCN-QCN |
| 37 | 607001 | QCN - 1" QUICK SNAP FITTING (346) | |
| | 607011 | QCN - 1¼" QUICK SNAP FITTING (646) | |
| 38 | 607018 | NHN - 1" NOZZLE COUPLING (346) | |
| | 607019 | NHN - 1¼" NOZZLE COUPLING (646) | |
| 39 | 605204 | DVC-4 STD. TUNGST. VENTURI NOZZLE MODEL 346 | |
| | 605205 | DVC-5 STD. TUNGST. VENTURI NOZZLE MODEL 646 | |
| 40 | 618016 | NW-1 NOZZLE WASHER | |
| 41 | 618005 | QCN-O QUICK SNAP FITTING WASHER | |
| 42 | 606193 | DUAL LINE REMOTE CONTROL HOSE 55' C/W FITTING | |
| 43 | 908006 | PNEUMATIC DEADMAN CONTROL HANDLE ❁❁❁ | |
| 44 | 607074 | TANK COUPLING 1¼" NYLON | |

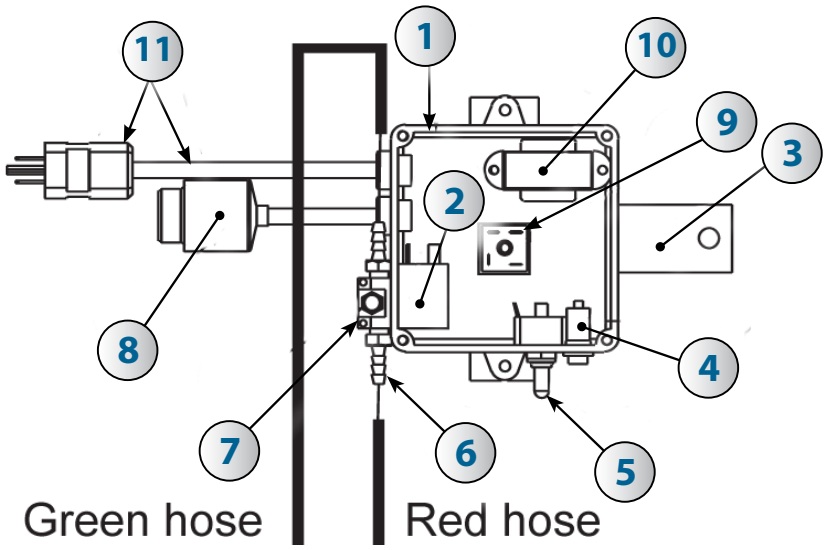
❁ *See details parts page 19*
❁❁ *See details parts page 24*
❁❁❁ *See details parts page 23*
❁❁❁❁ *See details parts page 30*

# RC-176 & RC-186 - Electrical boxes, exploded view

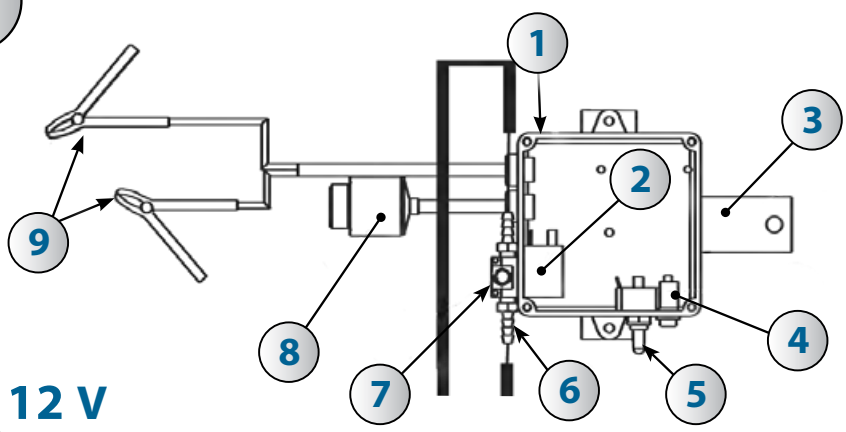
## A




## A2




## A1



# RC-176 & RC-186 - Electrical boxes, Parts list

## A

| # | STOCK | DESCRIPTION | # | STOCK | DESCRIPTION |
|---|---|---|---|---|---|
| A1 | 616068 | 12 VDC REMOTE CONTROL | 3 | 616520 | EXTENSION CABLE 55' |
| A2 | 616070 | 120 VAC REMOTE CONTROL BOX | 4 | 616410 | ELECTRIC PLUG |
| 1 | 616411 | ELECTRIC CONNECTOR | 5 | 616411 | ELECTRIC CONNECTOR |
| 2 | 616185 | ELECTRIC PLUG & WIRE | 6 | 616410 | ELECTRIC PLUG |

## A2

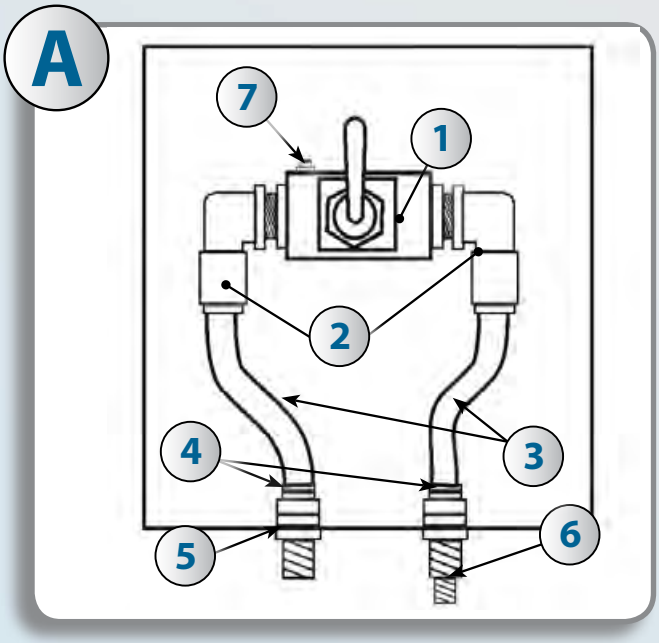
| # | STOCK | DESCRIPTION | # | STOCK | DESCRIPTION |
|---|---|---|---|---|---|
| 1 | 617336 | JUNCTION BOX | 6 | 632273 | PL ¼" X ½" MPT ADAPTOR |
| 2 | 608565 | SOLENOID VALVE 12 V NC | 7 | 608284 | MUFFLER 1/8" MPT |
| 3 | 616096 | CONTROL BRACKET | 8 | 616411 | ELECTRIC CONNECTOR |
| 4 | 617104 | RED LIGHT 12 V | 9 | 617240 | DIODE |
| 4A | 617105 | GREEN LIGHT 12 V | 10 | 610205 | TRANSFORMER 120-12 V |
| 5 | 617014 | SWITCH E3 | 11 | 616585 | ELECTRIC PLUG & WIRE |
| 5A | 617019 | TOGGLE SWITCH PROTECTOR | | | |

## A1

| # | STOCK | DESCRIPTION | # | STOCK | DESCRIPTION |
|---|---|---|---|---|---|
| 1 | 617336 | JUNCTION BOX | 5A | 617019 | TOGGLE SWITCH PROTECTOR |
| 2 | 608565 | SOLENOID VALVE 12 V NC | 6 | 632273 | PL ¼" X ⅛" MPT ADAPTOR ⅛ |
| 3 | 616096 | CONTROL BRACKET | 7 | 608284 | MUFFLER ⅛" MPT |
| 4 | 617104 | RED LIGHT 12 V | 8 | 616411 | ELECTRIC CONNECTOR |
| 4A | 617105 | GREEN LIGHT 12 V | 9 | 616105 | 12 VOLT CLIPS (PAIR) |
| 5 | 617014 | TOGGLE SWITCH | | | |

# RC176 & RC186 assembly - Electrical boxes, exploded view

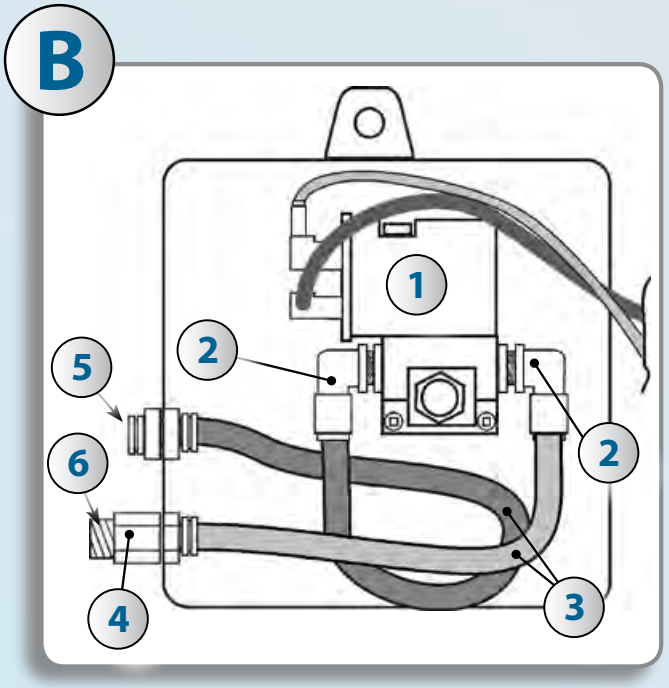
A




| # | STOCK | DESCRIPTION |
|---|---|---|
| A | 616075 | COMPLETE BOX ASS'Y |
| 1 | 608528 | AIR VALVE TAC 2 |
| 2 | 324561 | 90° PUSH-IN FITTING x 1/8 |
| 3 | 324571 | NYLON TUBING (SOLD BY FOOT) |
| 4 | 324503 | PUSH-IN FITTING x ¼ M |
| 5 | 632202 | ¼ HEX NIPPLE |
| 6 | 633214 | HEX NIPPLE ¼ x 1/8 |
| 7 | 632050 | PLUG 1/8 M |

See box page 25

B



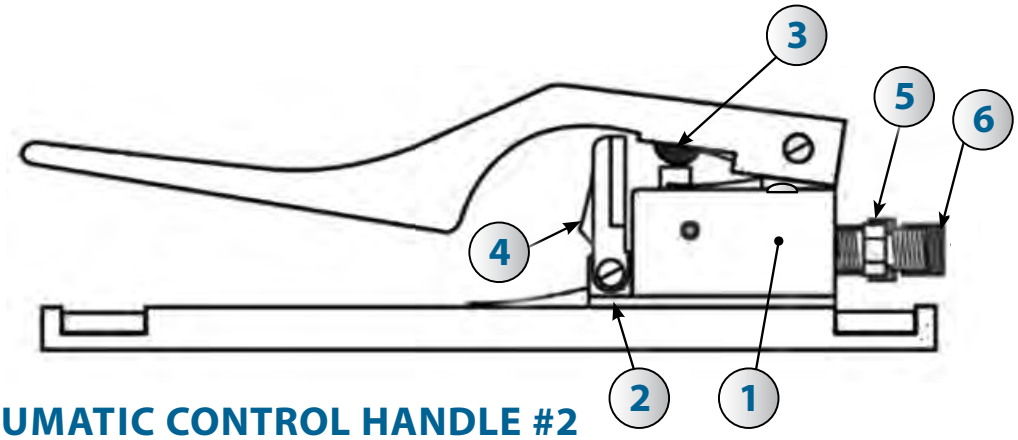

120 V

| # | STOCK | DESCRIPTION |
|---|---|---|
| 1 | 608568 | SOLENOID VALVE |
| 2 | 324561 | 90° PUSHING FITTING x 1/8 |
| 3 | 324571 | NYLON TUBING (SOLD BY FOOT) |
| 4 | 324502 | PUSH-IN FITTING |
| 5 | 324503 | PUSH-IN FITTING x ¼ M |
| 6 | 632202 | ¼ HEX NIPPLE |

See box page 25

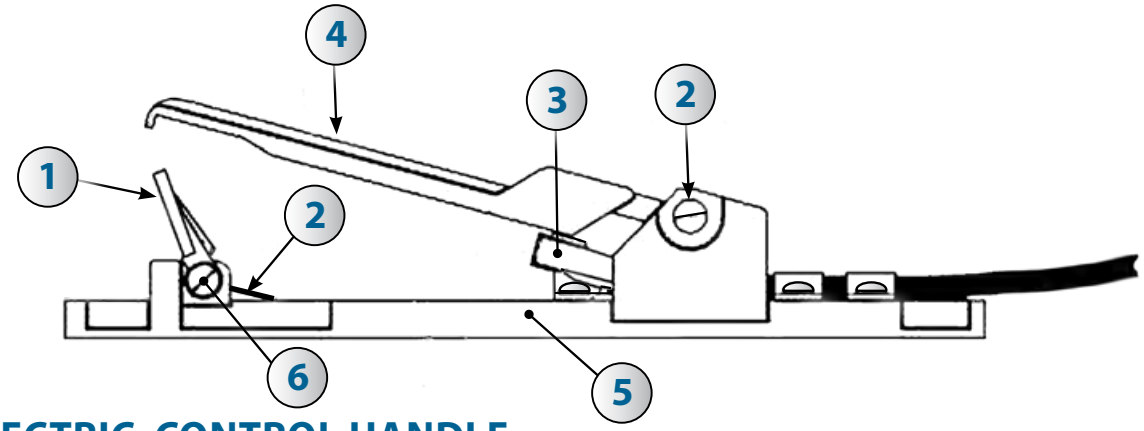
# Control handle systems - Exploded view

## A



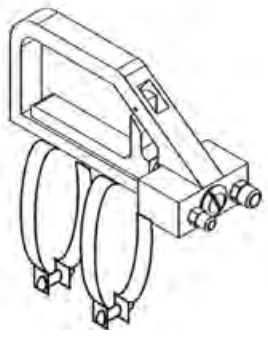

PNEUMATIC CONTROL HANDLE #2

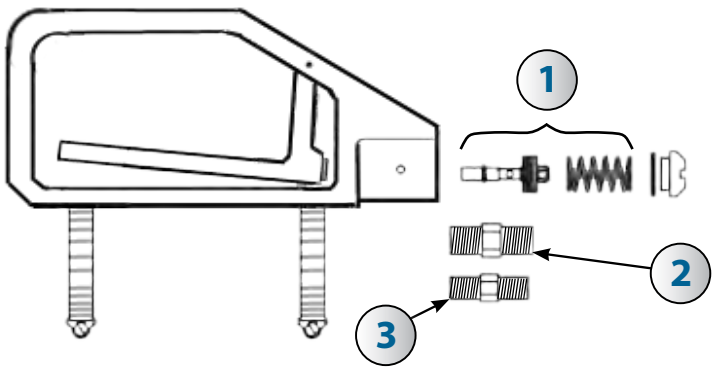
## B




ELECTRIC CONTROL HANDLE

## C






PNEUMATIC "D" HANDLE

# Control handle systems - Parts list

## A

| # | STOCK | DESCRIPTION | # | STOCK | DESCRIPTION |
|---|---|---|---|---|---|
| A | 908006 | PNEUMATIC DEADMAN CONTROL | 4 | 770062 | SAFETY FLAP |
| 1 | 770061 | HANDLE CONTROL PNEUMATIC REPAIR KIT | 5 | 632002 | HEX NIPPLE 1/8" NPT x 1/8" W/BALL ST |
| 2 | | | 6 | 632224 | HEX NIPPLE 1/8" NPT x 1/4" W/BALL ST |
| 3 | | | | | |

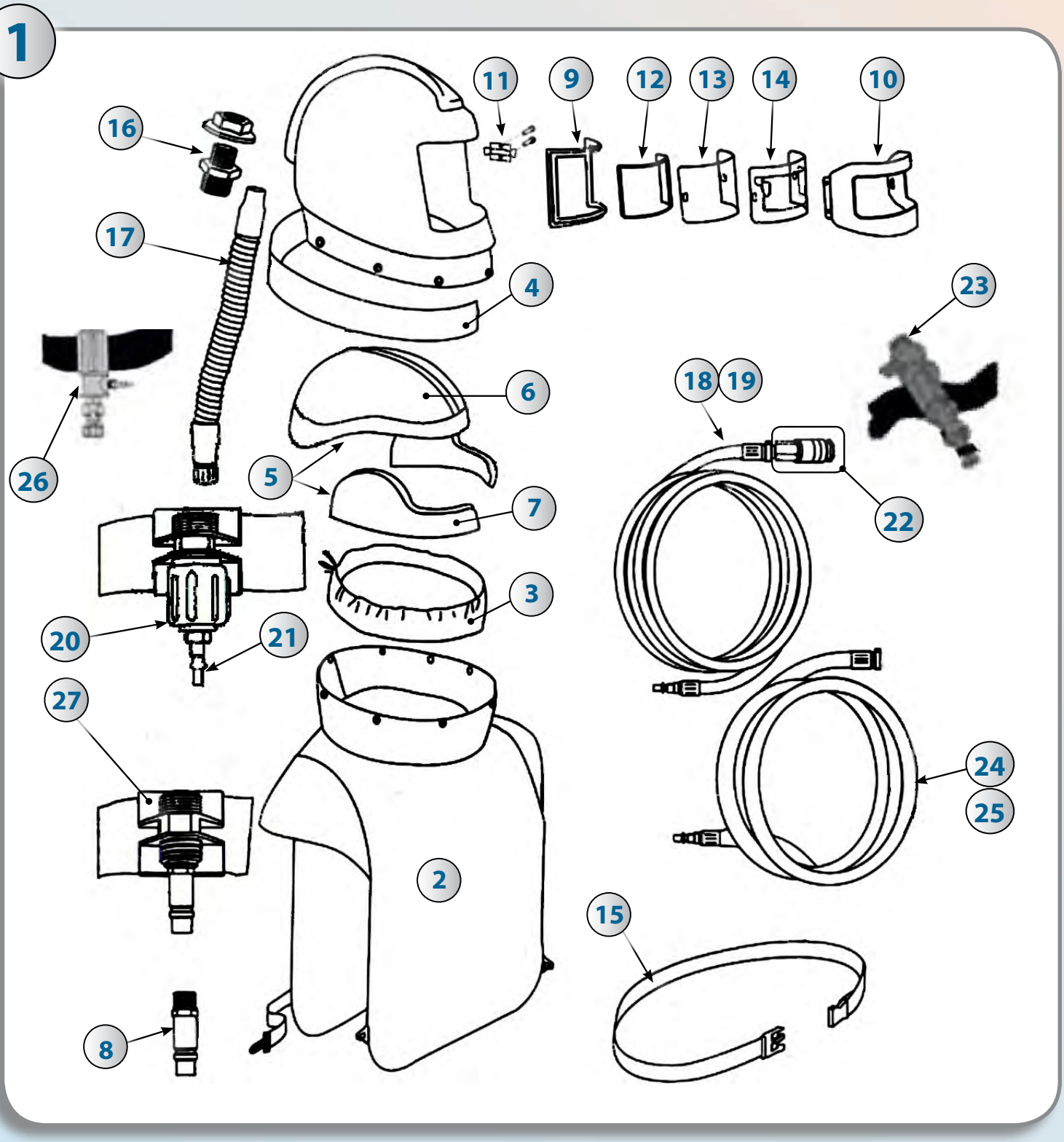
## B

| # | STOCK | DESCRIPTION | # | STOCK | DESCRIPTION |
|---|---|---|---|---|---|
| B | 770160 | ELECTRIC DEADMAN CONTROL | 4 | 770054 | HANDLE |
| 1 | 770051 | SAFETY LEVER LOCK | 5 | 770055 | BASE |
| 2 | 770052 | TORSION SPRING | 6 | 770060 | SHOULDER SCREW |
| 3 | 770063 | MICRO SWITCH | | | |

## C

| # | STOCK | DESCRIPTION | # | STOCK | DESCRIPTION |
|---|---|---|---|---|---|
| C | 608800 | PNEUMATIC "D" HANDLE ASSEMBLY | 2 | 632202 | HEX. NIPPLE ¼" |
| 1 | 608804 | REPAIR KIT | 3 | 632214 | HEX. NIPPLE 1/8" |

# NOVA 2000 assembly - Exploded view

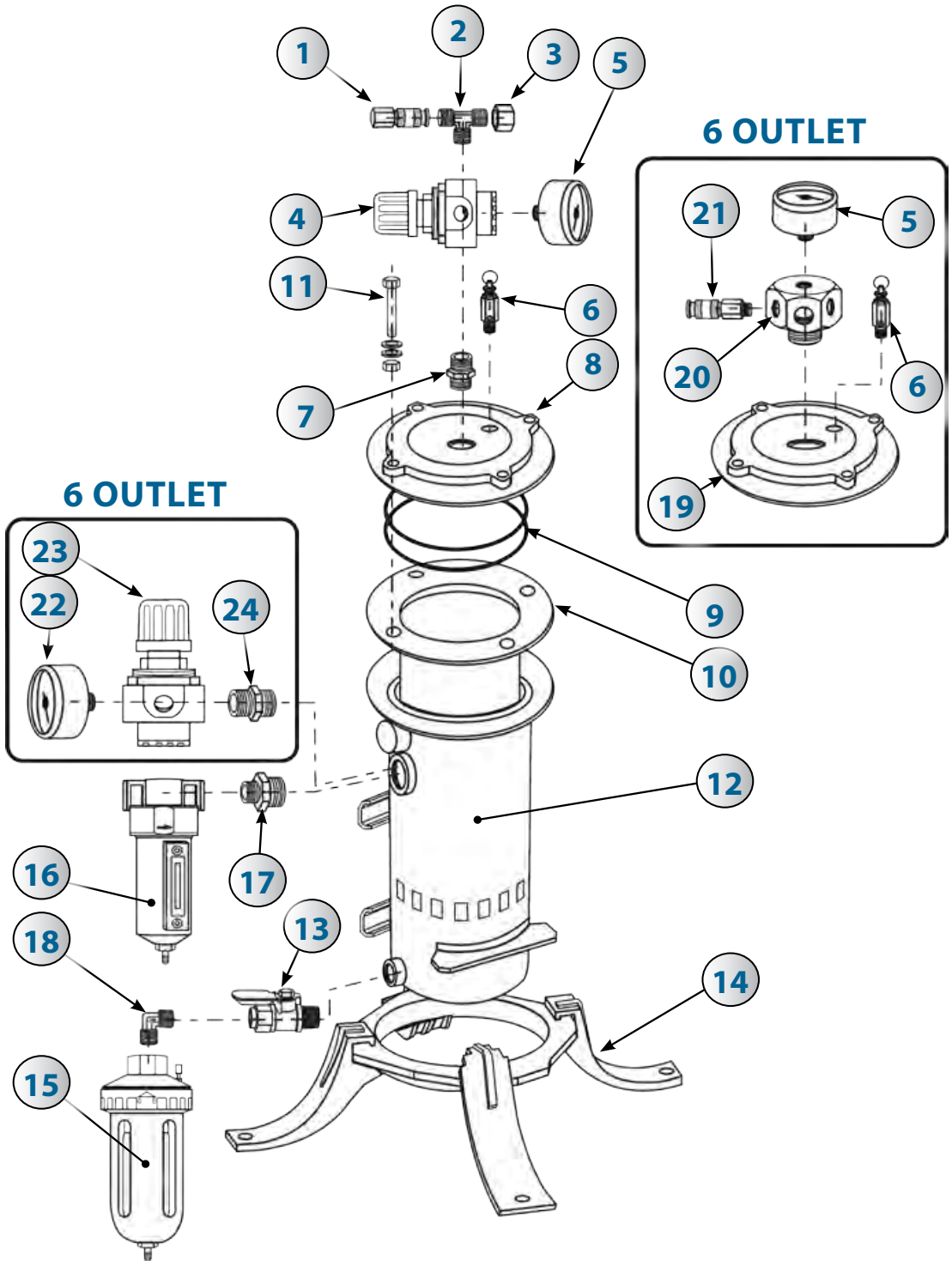


# NOVA 2000 assembly - Parts list

| # | STOCK | DESCRIPTION | # | STOCK | DESCRIPTION |
|---|---|---|---|---|---|
| 1 | 603500 | NOVA 2000 ASSEMBLY | 15 | 603521 | BELT W/BUCKLE |
| 2 | 603520 | CAPE, 28" NYLON | 16 | 603522 | AIR INLET ASSEMBLY |
| 3 | 603502 | INNER BIB | 17 | 603515 | BREATHING TUBE |
| 4 | 603503 | CAPE COVER BAND | 18 | 603523 | 25' BREATHING AIR SUPPLY HOSE, 3/8" |
| 5 | 603517 | HEAD DOME & SIDEWINGS LARGE | 19 | 603524 | 50' BREATHING AIR SUPPLY HOSE, 3/8" |
| 6 | 603504 | HEAD DOME (MEDIUM) | 20 | 603516 | FLOW CONTROL VALVE ASSEMBLY W/BELT |
| 7 | 603505 | SIDEWINGS (MEDIUM) | 21 | 603519 | 1/4" QUICK RELEASE TAIL, MALE THREAD, 1/4" MNPT |
| 8 | 603506 | 1/2'' QUICK RELEASE TAIL 3/8'' MNPT | 22 | 603525 | ¼" QUICK RELEASE COUPLER, FEMALE THREAD, ¼" FNPT |
| 9 | 603507 | WINDOW FRAME GASKET | 23 | 603510 | COOL TUBE W/BSP THREAD & BELT |
| 10 | 603508 | VISOR | 24 | 603526 | 50'BREATHING AIR SUPPLY HOSE, 1/2" |
| 11 | 603509 | LATCH & SCREWS | 25 | 603527 | 100' BREATHING AIR SUPPLY HOSE, 1/2" |
| 12 | 603514 | INNERS, 10 PACK, (ANSI Z87.1-1989) | 26 | 603511 | HOT TUBE W/BSP THREAD & BELT |
| 13 | 603512 | OUTERS, 50 PACK, 0.20 THICK | 27 | 603528 | CONSTANT FLOW VALVE ASSEMBLY, 1/2" |
| 14 | 603513 | TEAR AWAYS, 50 PACK | 28 | | |

# RADEX Breathing airline filter - Exploded view

A



# RADEX Breathing airline filter - Parts list

| # | STOCK | DESCRIPTION | # | STOCK | DESCRIPTION |
|---|---|---|---|---|---|
| A | 603600 | **RADEX FILTER ASSEMBLY** | 13 | 603613 | DRAIN TAP, BRASS, ¼" NPT |
| 1 | 603601 | QUICK RELEASE COUPLER, FEMALE THREAD, 3/8" | 14 | 603614 | BASE MOUNT |
| 2 | 603602 | TEE, BRASS, 3/8" | 15 | 603615 | AUTO DRAIN UNIT, ¼" NPT |
| 3 | 603603 | CAP, BRASS, 3/8" | 16 | 603616 | MICRO MIST FILTER ½" ASSEMBLY |
| 4 | 603604 | PRESSURE REGULATOR, LESS GAUGE | 17 | 603617 | REDUCING NIPPLE, BRASS, 1" X ½" |
| 5 | 603605 | PRESSURE GAUGE | 18 | 603618 | ELBOW, BRASS, ¼" |
| 6 | 603606 | VALVE, PRESS RELIEF, 125 PSI, ¼" NPT | 19 | 603619 | SIX OUTLET FILTER LID |
| 7 | 603607 | HEX NIPPLE, BRASS, 3/8" | 20 | 603620 | 6 OUTLET MANIFOLD |
| 8 | 603608 | FILTER LID | 21 | 603621 | COUPLERS |
| 9 | 603609 | "O"- RING, SET OF 2 | 22 | 603622 | PRESSURE GAUGE |
| 10 | 603050 | FILTER CARTRIDGE, FLANGED | 23 | 603623 | SUPER HIGH FLOW REGULATOR |
| 11 | 603611 | BOLT, NUT, WASHER, SET OF 4 | 24 | 603624 | CONNECTOR, 1" NPT |
| 12 | 603612 | FILTER BODY | | | |

# ECO WARRANTY REGISTRATION

**ECO would like to thank you for your recent purchase of our product line. Please complete the card below and either mail or fax it to our office so that we may start the warranty of your product and keep you up to date on the EPA regulations by fax. Again, thank you for your purchase and if you have any suggestions or comments, please feel free to contact our office.**

**COMPANY NAME :** |__|__|__|